

MANUFACTURERS' RECORD

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

Trade-Name Registered in the U. S. Patent Office.

VOL. LVII. No. 6. }
WEEKLY.

BALTIMORE, FEBRUARY 17, 1910



{ \$4.00 A YEAR,
SINGLE COPIES, 15 CENTS.

Manufacturers' Record.

PUBLISHED EVERY THURSDAY BY THE
MANUFACTURERS' RECORD PUBLISHING CO.
BALTIMORE.

RICHARD H. EDMONDS, President.
FRANK GOULD, Vice-President.
VICTOR H. POWER, Treasurer.
I. S. FIELD, Secretary.

RICHARD H. EDMONDS,
Editor and General Manager.

EDWARD INGLE, Managing Editor.

ALBERT PHENIS,
General Staff Correspondent.

Branch Offices:

New Orleans—1012 Maison Blanche.

New York—52 Broadway.

Boston—643 Old South Building.

Chicago—1116 Fisher Building.

St. Louis—543 Century Building.

Subscription, \$1 a year
(payable in advance) to United States,
Mexico, Cuba, Porto Rico, Hawaii and the
Philippines.

To Foreign Countries (including Canada) in
the Postal Union, \$6.50 a year.

[Entered at the Baltimore Postoffice as sec-
ond-class matter.]

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THE U. S. GEOLOGICAL SURVEY'S REPORT ON THE BIRMINGHAM DISTRICT.

Ten years ago, when Abram S. Hewitt made the prediction, through the MANUFACTURERS' RECORD, that within 25 years Alabama would dominate the basic steel industry of the world, those who did not know Mr. Hewitt's rank as a great ironmaster and his extreme caution in forecasting coming events possibly thought that his statement was visionary. There were no tangible evidences which the layman could see justifying such a prediction. The iron industry of Alabama was then just emerging from the long, hard fight which had tested its staying qualities after the panic of 1893. The making of steel on a commercially profitable basis had not been proven, but the Tennessee Coal, Iron & Railroad Company had demonstrated that good steel could be made out of Alabama ores. It was in the light of this fact that Mr. Hewitt, with that marvelous foresight which enabled him to forecast the future in the iron world with such accuracy, made his prophecy.

In the last two years more has been accomplished to indicate the probable fulfillment of Mr. Hewitt's prediction than in the preceding eight years since the prediction was first made. With the advent of the United States Steel Corporation into the Alabama district the whole situation changed overnight. Uncertainty as to ample capital, as to the ability to draw the highest technical skill and the ability to go into the world's markets at every opportune moment passed away. Last year the

Tennessee Coal, Iron & Railroad Company entered the foreign markets with its steel rail and sold 118,000 tons to the Argentine, Brazil and other customers. The Steel Corporation is now building at Birmingham, through one of its subsidiaries—the American Steel & Wire Co.—a rod and wire mill, to cost over \$3,000,000, the product of which will be very largely exported to other countries.

Because of these facts, the importance of which justifies their repetition over and over again, the comprehensive five-page article in this week's issue of the MANUFACTURERS' RECORD covering the mineral resources of the Birmingham district, written by Mr. Ernest F. Burchard of the United States Geological Survey, which in substance is a condensation of the elaborate report recently issued by the Survey, becomes of more than sectional interest. It is in fact of national importance, for it has been well said that that country or that section of any country which can produce and market iron and steel at the lowest cost will dominate the world's trade. This article, which presents the main points in a report upon which the United States Geological Survey has been at work for several years, briefly reviewing the present situation at Birmingham, says:

To the observer who is acquainted with the district the situation offers striking possibilities not only for the establishment of additional steel works, but for the establishment of additional manufactures of all kinds of wares of iron and steel, such as structural steel, armor plate, guns, hardware and cutlery, springs, cars, engines, cables, automobile parts, mining machinery, and gas and water pipe, etc.

To the Birmingham district proper this report credits a total reserve of red ore of 796,000,000 long tons. Of coking coal in the Warrior field, Mrs. Burchard estimates the quantity as 4,195,328,000 tons.

The facts presented in this elaborate article only emphasize what the MANUFACTURERS' RECORD for more than a quarter of a century has been claiming, viz.: The unequalled advantages of the South for iron and steel making and the certainty of a vast expansion in this industry, so essential to the industrial progress of the whole South.

FINDING US USEFUL.

F. O. Siebert, Siebert-Herndon Electric Co., Lexington, Ky., writes to the MANUFACTURERS' RECORD:

With great pleasure we acknowledge that we had good results with the MANUFACTURERS' RECORD; still, as we are young subscribers we have experienced in these two months the value of your paper. I must say that I almost count the days from one issue to the other with anxiety, and I am almost always in the office of the Lexington Herald on Thursdays to read your paper, as my paper usually comes in on Friday noon.

I have found that your paper is the most valuable trade journal I have ever come across, and would not spare it for one-half dozen other ones.

Mr. J. C. Bowles, vice-president of the

Talladega National Bank, Talladega, Ala., writes:

Permit me to say that your heroic work all these years for the South is regarded generally by our grateful people as more valuable as the years go by, and to express the hope that your reward may be greater than can be expressed in mere dollars.

Mr. J. B. Mercer of the Mercer & Evans Company, Wilmington, N. C., writes:

The issue of January 6 is truly a feast of good things for Southern minds to feed upon, as is also your Annual Blue Book. To properly digest and assimilate this abundance of excellent mental food means the broader and stronger growth and development of the South. While our Wilmington section, a section of the South upon which nature has been lavish in the bestowal of her gifts of climate, soil and adaptability, is making wonderful progress in every way, little is known of what we really are doing. With the assurance of the 30-foot channel to the sea and the inland waterway and the building here of large and commodious terminal facilities by the railroads, Wilmington and its section are awakening to their possibilities. New people are coming in, and we welcome them. Wilmington is always ready to extend the glad hand of welcome to the right kind of immigration. I can't do without your weekly visits. The good you are doing the South is immeasurable.

WHAT CAN A BALE OF COTTON BUY?

What can a bale of cotton buy? What can the grower of the staple obtain in exchange for it? Considered superficially this question might seem an easy one to answer, and the answer, in the light of the change from the starvation prices of cotton in the last decade of the nineteenth century to the fair prices of the first decade of the twentieth century, might lead to a conclusion that cotton growers are at present rolling in unaccustomed wealth. That conclusion would hardly square with facts. It would be dominated by the confusion arising from the use of the dollar idea in estimating the value of cotton without due regard for the dollar idea in estimating the value of things for which cotton is exchanged. If there were no currency, no money medium of exchange, no metal standard of value of varying intrinsic value itself, the problem of low prices or of high prices for commodities would be simplified and the individual producer would measure the value of its product in terms of other products that he might obtain in exchange for it. How interesting the developments from such a return in this latter day to the primitive trucking system of exchange might be is suggested in a brief consideration of the purchasing power of a 500-pound bale of cotton in a year of "low prices," such as 1898, and in a year of "high prices," such as 1908. The full revelation would come from knowledge of the wholesale prices received by the cotton grower and the retail prices he must pay for most of his purchases. But it is practically impossible to make the study upon the retail basis, inasmuch as so many elements enter into the question of retail prices as paid by the ultimate consumer. However, a comparison of

average annual wholesale prices of certain articles, measured by the dollar, of arbitrarily fixed value itself, but varying frequently in purchasing power, will give one an inkling to the meaning to the grower of cotton of the advance in prices in the past 10 years. The average price of a 500-pound bale of upland middling cotton in 1898 was \$29.86; the average price of the same kind of bale in 1908 was a little less than \$52.32. Those were wholesale prices. What the bales could buy of other articles at wholesale prices in the two years mentioned is indicated in the accompanying table:

Commodities.	1898.	1908.
Corn, bushels.....	95	76
Wheat, bushels.....	33	53
Beans, bushels.....	24	22
Cornmeal, pounds.....	3,380	3,240
Flour, barrels.....	7.2	12.2
Bread, pounds.....	838	1,469
Steers, pounds.....	600	800
Hogs, pounds.....	790	930
Sheep, pounds.....	730	1,050
Bacon, pounds.....	501	580
Beef, pounds.....	381	560
Mutton, pounds.....	404	604
Butter, pounds.....	170	213
Coffee, pounds.....	471	833
Eggs, dozen.....	163	188
Herring, barrels.....	7	7.3
Molasses, gallons.....	96	147
Rice, pounds.....	491	832
Salt, barrels.....	45	66
Sugar, pounds.....	609	1,061
Potatoes, bushels.....	58	73
Brogans, pairs.....	32	46
Women's shoes, pairs.....	35	54
Thread, spools.....	979	1,282
Gingham, yards.....	693	972
Men's hosiery, pairs.....	480	828
Women's hosiery, pairs.....	504	780
Candles, pounds.....	487	715
Stove coal, tons.....	7.8	10.8
Petroleum, gallons.....	327	389
Barb wire, pounds.....	1,620	1,990
Common locks, number.....	398	315
Eight-penny nails, pounds.....	2,500	2,680
Pig-iron, tons.....	2.56	2.95
Steel rails, tons.....	1.69	1.86
Brick, number.....	5,200	10,200
Cement, barrels.....	14.9	35.8
Lime, barrels.....	40	50
White oak, feet.....	820	1,060
Yellow pine, feet.....	1,800	1,710
Cypress shingles, number.....	11,900	14,700
Turpentine, gallons.....	92	115

If all cotton growers were able to live at home, that is, to raise such food supplies as corn, wheat, beans, rice, live stock, potatoes, etc.; if everyone had his own granary and smokehouse instead of drawing upon the West in those particulars, there would be little use in comparing the relative prices of cotton and other farm products. But in view of the fact that some cotton growers pay too little heed to raising home supplies, it is interesting to note that cotton, in spite of its increased price, could buy less corn, less cornmeal and fewer beans at wholesale in 1908 than in 1898, and that, of course, there was even a greater difference when it came to retail prices. Between 1898 and 1908 the dollar value of a bale of cotton increased more than 76 per cent., but its value in exchange for other direct or indirect farm products was nothing like as much, the bale of cotton being able to buy in 1908 at wholesale only 60 per cent. more of wheat than in 1898, only 70 per cent. more flour, 33½ per cent. more beef on the hoof and 47 per cent. more fresh beef, 18 per cent. more live hog and 16 per cent. more bacon, 44 per cent. more sheep and 49 per cent. more mutton, 25 per cent. more butter and 26 per cent. more potatoes.

In the case of many articles which the farmer cannot raise the disparity

was equally great if not greater. One bale of cotton could buy seven barrels of herring in 1898, and only about a third of a barrel more in 1908. It could buy only 46 per cent. more salt, 75 per cent. more sugar, 44 per cent. more brogans, 54 per cent. more women's shoes, 30 per cent. more sewing cotton, 40 per cent. more gingham, 72 per cent. more men's stockings, 54 per cent. more women's stockings, 46 per cent. more candles, 38 per cent. more coal, 19 per cent. more petroleum, 23 per cent. more barb wire, 7 per cent. more nails, 25 per cent. more lime, 29 per cent. more white oak lumber, 7 per cent. more yellow pine lumber, 24 per cent. more cypress shingles, 25 per cent. more turpentine, and fewer common locks. In other words, although the increased price of cotton enabled it to buy more of most of the commodities mentioned in the list than in 1898, the increased price of these commodities diminished more or less the advantage to the cotton grower in the advance in the price of the staple, even without taking into account the coincident increase in the cost of making a bale of cotton.

By the time the wholesale prices had become the retail prices paid by the farmer, these increases in quantities of commodities that he might obtain for his cotton sold at wholesale became much less if they did not actually become decreases. In the absence of authoritative figures of average retail prices, varying according to localities, what the individual farmer could obtain for his cotton in 1908 of advantage over 1898 may best be figured out by him. If the figurings on this point by a large number of cotton growers could be brought to the attention of folks who would persuade themselves that even cotton at 15 cents a pound in 1910 is too high a price, they might be led to take a saner view of the situation.

CREOSOTED WOOD LESS LIABLE TO BURN.

An interesting fact about wood treated with creosote preservatives has been developed, according to a report quoting from a paper read by H. M. Rollins of the Texas & New Orleans Railroad Co.'s wood-preserving works, at the annual meeting of the Wood-Preservers' Association at Chicago. Mr. Rollins discussed the "Inflammability of Treated Timber," confining his remarks to the creosoting process, and said that while wood thus prepared was at first rendered more inflammable, it gradually lost that quality and became considerably less liable to the effects of fire than untreated wood. He explained that this change resulted from the evaporation of the lighter oils in the preservative and the deposit of their residues in the timber. Tests were made with poles that had been treated, showing that they were only slightly charred, the flames dying out in about ten minutes; while untreated poles subjected to flame in a like manner burned through, the fire lasting about two and a half hours.

This discovery should be of great value to railroads, which are obliged in their first construction to erect wooden bridges and trestles that are commonly liable to destruction by fire. Many serious train wrecks have resulted from either the total or partial burning of such structures. According to Mr. Rollins' paper, it might be possible to treat bridge timbers with creosote and after they were permitted to remain in the open air long enough for the evaporation referred to to be completed they

could be used in bridge building or for other structural purposes. It would be necessary, of course, to have the timbers piled after treatment in such a manner, with ample openings between them, to allow the process of evaporation to proceed without hindrance, because, if they were laid one on top of another the vaporizing of the lighter elements of the creosote could not be equally accomplished.

While this theory as to the reason why the treated wood becomes less inflammable may be wholly and completely correct, it is possible that the weathering process, or the effects of alternate rain and sunshine, is needed to secure the desired change in the degree of combustibility of the material. If that is so, the mere piling of treated timber in the open air would not be sufficient to accomplish the necessary results; it would have to be so placed that the weather would affect all sides of the wood alike. Thus it would have to be turned over from time to time in order to accomplish its complete preparation. Doubtless the conclusions expressed were based upon observations of timber which had been in actual use, although in the report quoted nothing to that effect appears.

The results of possible tests to determine exactly the character and amount of exposure required to render wood less liable to the effects of fire would be valuable as well as interesting, and now that the subject has been opened, it is to be hoped that either Mr. Rollins or someone else will make experiments, because the creosote preservative treatment is widely used and there are many people other than railroad men interested in it. For instance, thousands of homes are built with wooden exteriors colored by means of creosote stains, and if the chemical has rendered them less liable to damage or destruction by fire, it would be exceedingly comforting to the occupants to know it, besides being of great advantage to others contemplating the erection of wooden buildings for either residence or other purposes.

ON READING ADVERTISEMENTS.

In the advertising pages of the MANUFACTURERS' RECORD there is a world of information. As we have often said, our readers might possibly get along without a study of our editorial pages, and some of them might do business, although at a disadvantage, without any of the reading pages, but nobody can afford to miss reading our advertising pages. They are full of news and views, brimming over with information needed by thousands of people. Commenting on this phase of newspapers, the *Decorative Furnisher* says:

Manufacturers who spend money in magazine advertising and neglect trade publications should be interested in what a buyer for a big retail store said in a recent interview. This buyer knows his business thoroughly. He says: "Many times customers ask for advertised products and cannot tell us who makes them. I turn to your paper to see if the article is advertised there, and if it is not, I find it a difficult matter to locate the maker. The result is that sales are lost, and it seems to me manufacturers who advertise to consumers must sacrifice thousands of dollars annually, because they fail to connect with retailers by means of their trade papers. The trade paper is the retailer's reference book or catalogue of new products. One of its most valuable contents to live dealers is the advertising pages, where we find from month to month goods advertised we never heard of before, or the name of the manufacturer of goods we need. The editorial pages are helpful, but we cannot do without the advertising pages, for they help us to fill orders for customers and earn our bread and butter. From my

experience, I should say the manufacturer should no more neglect to advertise in the trade paper than to employ a force of competent salesmen. As a retailer, I refer to my trade paper constantly to find out who makes goods asked for by customers, and I feel as much disappointed when I don't find their advertisement as I do when I cannot find a name I am looking for in the telephone book. Surely, all manufacturers—except the little fellows—can afford to advertise in the trade papers."

TRANSPORTATION COST AND EARNINGS.

Favorable comment is elicited here and there by gratifying exhibits of several railroads of the South in their published annual reports covering the fiscal year ended June 30, 1909, and appearing in pamphlet form. High operating cost was frequently a conspicuous feature of railroad reports in this section prior to the panic of two years ago, this meaning the proportion of gross earnings consumed in the work of moving traffic. As compared with the cost of conducting transportation on lines in some other parts of the country, the showing made by several of our Southern roads was not flattering. Of course, it might be explained that the South generally does not enjoy a density of traffic equal to that of the North or the West, although public demands compel the running of numerous trains, notwithstanding the average of them that are comfortably filled falls far short of the average on roads in the other two sections mentioned, but that would not by any means wholly account for the difference displayed by cold, unsympathetic figures, which cannot be cajoled into any other utterance than that of stern fact. Yet much, if not all, of the cause of the disagreeable truth has been removed, according to the late figures, which speak in notes of far more agreeable tones to the waiting ears of shareholders and others concerned.

Brief study of the data recently presented and comparison of it with the reports of similar date in 1907 reveal that there has been an average reduction of more than 21 per cent. in the cost of conducting transportation as compared with operating revenue on five prominent lines in the South, notwithstanding the increased cost of things, although the figures for one of the roads indicate that in the movement for economy its careful management, even in 1907, had left comparatively little to be desired; its figures were then the lowest and they are now within a fraction of equaling the lowest of the five. But the figures themselves tell the tale: In 1907 the Seaboard Air Line spent 47.6 per cent. of gross earnings to conduct transportation, the Southern Railway 42.2, the Atlantic Coast Line 41.3, the Central of Georgia 40.4, and the Louisville and Nashville 37.2 per cent. But in 1909 the Southern showed highest in the cost of handling traffic, namely, 35.1 per cent. of gross earnings, the Seaboard second with 33.8, the Atlantic Coast Line third (as before) with 32.5; next coming the Louisville & Nashville, 32.1, and the Central of Georgia, 31.5 per cent. These data show that the average percentage in 1907 was 41.8 and in 1909 33, a great step in the right direction.

It is very notable that the Seaboard has accomplished such a change, that it is spending 29 per cent. less out of earnings to handle its business than it did two years ago. The change effected by the Southern Railway in its showing indicates that there is still

something to be desired as to its expenditures for handling traffic. Its figures were next to the highest; they are now at the top, although reduced 16% per cent. Doubtless they are susceptible of further improvement by the application of more economical methods after a careful study of revenue and the conditions surrounding the sources thereof, as well as of the movement of traffic. Commenting upon these reports, a writer in the *New York Globe and Commercial Advertiser* refers to them in a manner very complimentary to Southern railroad managers.

In connection with these results there remains to be observed the fact that they were accomplished by men who were with the several roads during both of the years under consideration, and this would seem to demonstrate conclusively that there is little or no lack of transportation talent in the South, but, on the other hand, there exists with the companies the men who, given the freedom to achieve reforms as may appear requisite, are fully capable of conducting traffic to the advantage of both the railroads and the public.

BONDED COTTON WAREHOUSES.

More and more Southern men of financial acumen are coming to recognize in a system of bonded cotton warehouses a solution of many of the harrassing problems involved in the marketing of the South's cotton crop. For many years the MANUFACTURERS' RECORD has advocated such a system, believing that it would be to the advantage of the grower and the manufacturer as tending to become almost an automatic maintainer of an equitable price for the staple and, consequently, of material conditions in the South all along the line. The far-reaching value of such a system is emphasized by Col. Robert J. Lowry, president of the Lowry National Bank of Atlanta, in an article in *The Constitution*. Col. Lowry believes that cotton should continue to bring about 15 cents a pound and that it is a satisfactory security for an advance by the banks of from 10 to 12 cents a pound. To maintain its value as a security, cotton must be saved from the damage done its price through the bulk of the crop being thrown upon the market by the growers within four or five months of the opening of each season. The necessity for ready cash is what compels the farmers to resort to this dumping. Southern banks have now and again co-operated liberally with the growers in minimizing this necessity and have thereby demonstrated not merely the advantages, but also the practicability of a system assuring permanently the safety of the cotton and its availability as a basis for loans. Col. Lowry finds in the elevator system in wheat-growing sections a practical exposition of the advantages of the bonded warehouse for cotton. He says:

During the past few years it has been my pleasure to travel quite extensively through the Middle West, and I have had deeply impressed upon my mind conditions as they exist in that grain-producing section of the Union. In taking notice of the large, commodious and thoroughly-equipped elevators for the proper storage and care of the grain I have contrasted conditions in the South as to our cotton crop with the favorable condition out there for handling their great crop.

These immense elevators are the direct means of saving to the farmers of that section millions of dollars annually. For instance, a man in the West, we will say, raises 1000 bushels of wheat; he gathers it and carries it to a nearby elevator, and it

is put into that elevator in bins and classes 1, 2, 3, 4 and so on, according to grade, and a receipt is given to him for his wheat, describing it accurately, giving its grade, the quality, when stored and all the data necessary to identify it beyond question, and the wheat is to be delivered only upon the return of that receipt, properly indorsed. This receipt then becomes a good negotiable instrument, uniformly and universally recognized as an authentic and unquestionable security. The farmer takes that receipt to any bank and hypothecates it for such money as he needs to pay his obligations, and the wheat remains in the elevator as long as he sees fit to hold it, properly cared for, insured and in good condition for immediate use. Of course, this security is only recognized for the reason that these elevators are conducted on a strict business basis, and their receipts can be verified, and, in fact, are only issued in a bona-fide way, protecting both the planter and the banker who might advance money on it.

Now, in the South, suppose the farmer raises 100 bales of cotton and owes \$2000 or \$2500. He wants to pay his debts, but he does not want to sell his cotton during the period when the market is glutted and when he would have to sell at the minimum price. If there was a bonded public warehouse nearby, conducted on the same business principles on which the elevators of the West are run, where he could store it at a minimum expense and have it classed or typed, insured at minimum cost (because these warehouses should be modern and as far as possible fireproof in construction), and protected, and takes a receipt for it properly classifying or grading it, describing it, giving the quantity, quality, grade and so forth, this would be a good negotiable security, recognized everywhere, because it identifies the cotton, and all the facts set forth in the receipt could be verified, if necessary, as well as the signature to it. Then the planter takes that receipt to his banker anywhere and gets the money to pay his debts, and he is enabled to hold his cotton satisfactorily. This will enable the South to husband its crop in the proper manner and get the full benefit of any advance in prices.

If the cotton-producing States would establish throughout the cotton belt a series of these bonded warehouse, conducted on sound business principles, it is my candid opinion that it would not be necessary for a farmer to turn loose his cotton until the price suited him, for the banks would recognize the gilt-edged security and carry advances at reasonably low rates of interest.

The Farmers' Union has already the beginnings of a system of cotton warehouses, and here and there in the South other interests are carrying out the bonding principle to a limited degree. Much has already been accomplished in demonstration of the value of closer co-operation between the banks and the cotton growers and of the utility of warehousing upon a business basis. It should be a comparatively easy task for such financiers as Col. Lowry to concentrate the attention of everybody interested upon the manifest benefits to accrue from the bonded cotton warehouse and to crystallize the sound opinion thus created into a definite and widespread business proposition.

Mr. A. W. McKeand, secretary of the Chamber of Commerce of Oklahoma City, Okla., writes to the MANUFACTURERS' RECORD:

I have been specially impressed with your attitude regarding the Southern Commercial Congress, and also the shots you have taken at the inactive commercial organizations and secretaries. I agree with you in your stand on both these points, and more especially on the inactivity of the commercial bodies and the incapacity of a large number of men in the new profession.

Mr. William B. Reily, president of the Reily-Taylor Company, coffee importers and roasters, New Orleans, writes to the MANUFACTURERS' RECORD:

We believe the MANUFACTURERS' RECORD is doing more good work for the Southern States today than any other half a dozen publications combined. We certainly wish you success.

A RARE OPPORTUNITY MISSED BY SOME SOUTHERN BANKERS.

A few weeks ago the MANUFACTURERS' RECORD sent to several hundred bankers throughout the South some specific inquiries in regard to the business outlook with special reference to the financial condition of the farmers in their vicinity. Among the banks to whom these letters were sent was the First National of Perry, Fla., and from Mr. W. L. Weaver, the cashier, we received a brief statement as to the business conditions of the town and the surrounding country. It so happened that the day after publishing Mr. Weaver's letter, or on January 28, we received from a Chicago banking-house the following telegram:

Are offered thirty thousand Perry, Florida, sewer and street lines. Do you think safe, desirable investment? Answer night.

Later by mail a letter came from the firm, saying:

We might say in explanation of the above telegram that the information we want is facts concerning the city itself, character of the buildings, and as to whether the surrounding country is adapted to agriculture, or will be when the land is cleared, and your opinion as to the moral hazard of any bond issue in this particular city and locality.

You will, of course, understand that any purchase we would make would be subject to our attorney's opinion, so we ask nothing in regard to the legality of the issue for that reason.

In reply to this letter we gave some specific facts about the town, and added:

We enclose some statements about Perry, Fla. The information as to the character of the country is given in the letter from Mr. Weaver, cashier of the First National Bank of Perry, published in the last issue of the MANUFACTURERS' RECORD, clipping of which we enclose, etc.

In reply to that we received the following letter:

We beg to thank you for your favor of the 1st instant regarding Perry, Fla. The information which you gave us is exactly what we wanted, and we feel no hesitation now in buying the bonds.

These facts are given simply to illustrate how it is possible for bankers and business men to aid their communities, and in doing so to aid their own business interests. Every banker in the South, as well as every other business man, is vitally interested in keeping in touch with what his own community and other communities throughout the South are doing, and what investments are coming into the South, and the reasons therefor. Mr. Weaver, the cashier of the First National Bank of Perry, probably never imagined when, in complying with our request, he wrote some facts about the town and the surrounding country that his letter would within less than a week result in bringing about a sale of \$30,000 of Perry bonds.

This is only a specific case, showing the value of publicity and illustrating how often live, active men keeping in touch with what is being done benefit themselves and their community. A number of Southern bankers to whom these letters of inquiry were sent with a return stamped envelope for reply failed to appreciate the value to themselves and their community to accrue from giving the facts desired, and thus missed a great opportunity. Those who failed to reply missed an exceptional opportunity to advertise their bank and their community.

It so happened that Congressman Boutell of Chicago, on January 27, replying to a speech by Congressman Henry of Texas, desired to show the increasing prosperity of the South. That very morning he had received his copy

of the MANUFACTURERS' RECORD, for which he wisely subscribes, containing these letters from Southern bankers, and he saw at once their value to him in making a telling point, and so he embodied every one of them in his speech. They filled four or five pages in fine type of the *Congressional Record*. Through the *Congressional Record* they have been given a wide official circulation, and through the distribution which will be given by Congressman Boutell to his speech these letters will doubtless reach some hundreds of thousands of people who otherwise would not have seen or heard of Southern prosperity or of these particular bankers and their towns.

The business man in the South, whether banker or merchant or manufacturer, who fails to watch and carefully study every issue of the MANUFACTURERS' RECORD is missing more than he will ever know.

BIRMINGHAM.

At the annual meeting last week of the Chamber of Commerce of Birmingham, Ala., the first annual meeting of the organization in its new \$300,000 home, Secretary Joseph B. Babb presented a mass of interesting facts showing the progress of the district during the year. He said that the total capitalization of new corporations chartered was \$5,098,000, and that other corporations increased their capital stock by \$2,245,000. At a cost of \$3,679,777

there were erected 2265 buildings. Extraordinary improvements included \$4,525,000 by furnace and coal companies, \$791,770 by the municipality, not including \$350,000 for school buildings, \$300,000 by railroads, \$265,000 by the Birmingham Railway, Light & Power Co. and \$150,000 by Birmingham water-works. The 17 banks have an aggregate capital of \$2,638,800, surplus \$1,625,000 and deposits \$19,525,000. Between 1904 and 1909 bank clearings increased from \$98,370,904 to \$108,807,162, and the assessed value of property from \$50,364,203 to \$33,979,764. In concluding his report Secretary Babb said:

"The figures that have been given above show a healthful and inspiring development of Birmingham and the district. The spirit of optimism pervades the community. The recent subscription of \$275,000 to build homes for the Y. M. C. A. and Y. W. C. A. has demonstrated the power of Birmingham when her citizens are united. The magnificent building which is the home of the Chamber of Commerce is another eloquent testimonial of Birmingham's public spirit.

Judge Gary, chairman of the Steel Corporation, has announced that the Tennessee Coal, Iron & Railroad Co. will expend in the immediate future something over \$7,000,000 in the development of its properties. Other companies here have extended programs on foot.

The Louisville & Nashville Railroad has announced that \$650,000 would be spent at Boyles in constructing up-to-date shops. The Horseshoe factory has already broken ground for its plant. The \$3,000,000 plant of the American Steel & Wire Co. is under way, and a number of lesser plants are in prospect.

The future is bright, and Birmingham, blessed with citizenship that yields to none in loyalty and strength, with resources that are unmatched in the civilized world, is moving grandly on toward a glorious destiny. She is building not only for today, but for all time. She is building not only skyscrapers and smokestacks, but edifices dedicated to the service of humanity.

She has grown greater in the past year, not alone in area, but in achievement and

ambition, and it may be truly said that the year 1910 has dawned upon a bigger and a better Birmingham."

ROME.

The Merchants and Manufacturers' Association of Floyd county, Georgia, with headquarters at Rome, Mr. Wilson M. Hardy, secretary, announces that it will be glad to circulate free of charge on request the attractive booklet which it has published, giving in there information about Rome and Floyd county. The booklet carries 80 half-tone illustrations of industries, residences, churches, schools, municipal buildings, mineral developments, agricultural operations and projects, and transportation facilities. Among the facts illustrated thus are an annual output of 225,000 tons of fertilizers, 15,000,000 brick, 60,000 stoves, the mining of iron ore, bauxite and clays, textile activities, combined capital and surplus of \$1,500,000 in five banks, three railroad systems, lumbering operations, and five water-powers tributary to the city aggregating 75,000 horse-power. The county yields peaches, apples, corn, cotton, hay, pecans, live-stock, poultry, etc.

NATIONAL NUT GROWERS.

The address of President J. B. Wight of the National Nut Growers' Association, made at the annual convention last fall, has been published in leaflet form and is an encouragement to everybody interested in the industry of nut growing, whether the almond and English walnuts of the West, the chestnuts and hickory nuts of the East or the pecans of the South. The officers of the association are Messrs. J. B. Wight, Cairo, Ga., president; J. B. Curtis, Orange Heights, Fla.; H. C. White, DeWitt, Ga., vice-presidents; J. F. Wilson, Poulan, Ga., secretary; M. B. McNeely, Little Rock, Ark., treasurer, and Theo. Bechtel, Ocean Springs, Miss.; E. W. Kirkpatrick, McKinney, Tex.; H. S. Watson, Bloomington, Ill.; Robert T. Morris, New York, N. Y., and B. W. Stone, Thomasville, Ga., executive committee.

FOR 1000 WORKMEN.

W. P. C. Harding, president of the First National Bank of Birmingham, in a letter referring to the town of Corey, which is being laid out adjacent to the great steel plant of the Tennessee Coal, Iron & Railroad Co., with a view to furnishing a residence and business center for the thousands of workmen to be gathered there, writes:

"The plans adopted for laying out the new town have been carefully worked out, and are simply ideal. It is going to be one of the model industrial towns of the world."

MANUFACTURERS' RECORD AT CEMENT SHOW.

The MANUFACTURERS' RECORD has engaged booth No. 130 at the Cement Show to be held in Chicago February 18-26. Several of our representatives will be in constant attendance at this booth, and a cordial invitation is extended to our readers and friends to call.

THE COTTON MOVEMENT.

In his report for February 11 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 161 days of the season was 8,252,570 bales, a decrease under the same period last year of 2,401,721 bales. The exports were 4,328,830 bales, a decrease of 1,803,801 bales. The takings were, by Northern spinners, 1,525,126 bales, a decrease of 320,690 bales; by Southern spinners, 1,290,243 bales, a decrease of 28,143 bales.

SOUTH CAROLINA FACTS.

The intelligent zeal and practical-mindedness of E. J. Watson, which has been

manifested to the great benefit of South Carolina since he entered upon his duties as Commissioner of Agriculture, Commerce and Industries of the State are apparent on every page of the sixth annual report of his department, relating to agriculture and commerce, and the first annual report dealing with labor, a duty added to Commissioner Watson's work by the General Assembly at its 1909 session. The reports are models of their kind, and should be in the hands of every investors or homeseeker who has South Carolina in his mind.

NORTH CAROLINA GOLD.

Deposit in Two Counties to Be Developed.

Thomas J. Dolan of Philadelphia and a number of other leading capitalists were lately reported in the MANUFACTURERS' RECORD as having purchased a gold-mining property in Franklin county, North Carolina, having in view the expenditure of a large amount of money for development. Replying to a telegram to Mr. Dolan, Mr. Maurice Brooks, secretary of the Portis Mining Co., which is the name given to the company organized for the development of this property, says:

"The Portis Mining Co. was incorporated January, 1909, under the laws of the State of Maine with an authorized capital of \$2,000,000, divided into shares of the par value of \$1 each. All of this stock is trusted, there being none for sale. The capitalization was based on a full and detailed report made by Richard H. Sanders, E. M. The object of the company is dredging for gold, principally in the State of North Carolina. The principal office is Empire Building, Philadelphia.

"The company's property, purchased for \$150,000, is located in Franklin and Nash counties, North Carolina, and consists of 500 acres of dredgeable gold-bearing area. Examinations, tests and preliminary development work have taken up the past 16 months. The company has now decided to install a seven-foot bucket, modern-type gold dredge capable of dredging 5,000 cubic yards per day, 40 modern pulverizers and concentrators of the same capacity, a 6,000,000-gallon-per-day pumping station, 700-horse-power electric-power plant, suitable buildings for the accommodation of laborers, and headquarters for the officials and clerical force.

"The cost of the above installation is not to exceed \$300,000, and is to be defrayed from the sale of \$500,000 general mortgage 6 per cent. sinking-fund bonds, which have been taken over by the Finance Company of Philadelphia. Contracts for the above are expected to be let April 1, and the entire equipment must be erected by not later than October 1. The builders must operate the plant satisfactorily for 60 days before turning the same over to the company. The company will begin operations on its own account about January 1, 1911.

"This property has been fully tested by sinking shafts, sampling old workings and systematic drillings over its entire area by a number of prominent mining engineers, such as Richard H. Sanders, E. M., Philadelphia; Arthur H. Noble, Charlotte, N. C.; H. T. Beckwith, E. M., Philadelphia; P. G. Lidner, E. M., New York; R. Kemp Welch, M. E., Philadelphia; Edward Royal Holden, E. M., New York; Joseph H. Blair, Ph.D., Boulder, Col.; A. C. Ludlum, president of the New York Engineering Co., and Alexander P. Rogers, E. M., New York, is the consulting engineer.

"An experimental testing and demonstrating plant, erected at a cost of \$30,000, has been in operation for some time, and tests were made from several hundred holes drilled with an Empire drill, and

several thousand yards of material run through the modern pulverizer and concentrator on the premises with satisfactory results.

"The work done during the past 16 months has not only demonstrated the fact that the property is rich in values, but has also proven that the material can be handled by combining a battery of modern pulverizing and concentrating machines with a gold dredge at a cost of not exceeding six cents per cubic yard, and 95 per cent. of the values recovered.

"No further tests and mechanical experiments being necessary, the company will now concentrate its efforts toward the speedy completion of its contemplated plant and the development of other parts of the much-neglected and most valuable dredging fields of North Carolina and the South."

The reports made on this property by the various experts employed are unusually interesting, as indicating that, in view of these experienced men, a gold-mining proposition of exceptional value has been located in North Carolina. Arthur S. Noble and H. T. Beckwith in their report say:

"The entire property is covered to an unknown depth of a decomposed rock called saprolite. This word, signifying literally rotten rock, is a general name given by Mr. Becker for such thoroughly decomposed earthy but untransported rock in the South without regard to what the original unchanged rock may have been. The saprolite certainly has a minimum depth of 10 feet, and may run to 50 or 100. Exposures show in many places depths of from 20 to 30 feet. On the surface it is a very fine red clay, and as you go down it changes to a greenish-white and white, but more compact, and apparently retains its clayey nature. Through it run innumerable decomposed quartz veins and stringers from the thickness of a knife blade to a few feet. It is in this saprolite, covering, as I said above, the whole of the property, that the gold is found in a free state, distributed more or less irregularly all through it to the depth shown by the exposures in the gulches and old workings. Of the entire area about one-half has been worked over in the past to a depth of several feet for the gold. The material was gotten to the sluices and the gold saved in them. Owing to the clayey nature of the saprolite, it could not have been thoroughly disintegrated by this method, and only a portion of whatever values it contained could have been saved by it."

R. H. Sanders of Philadelphia says: "Beside these pannings were made two clean-ups of the washing machine. The first consisted of 408 cars of 18 cubic feet capacity, which gives 273 cubic yards of loose clay in the cars, or, say, about 205 cubic yards of clay in place. The recovery was 3,590 grains troy weight of gold, giving an estimate value of \$134.25, or 65 cents per cubic yard. I say 'estimated value,' as the gold has not been refined, and has some impurities in it. The second clean-up was of 50 cars, containing 331 $\frac{1}{3}$ cubic yards—about 27 cubic yards in the cut. The gold from this clean-up weighed 868 grains, of an estimated value of \$33, or \$1.27 per cubic yard of clay.

"These two tests were made from a cutting about 300 feet long and from surface cuttings of 10 feet in depth. Taking all, the test of the ground gives an average value of 25 feet in depth and over an area of 330 acres at \$2 per cubic yard, there being in this area, 25 feet deep, 13,310,000 cubic yards at \$2 per cubic yard, which makes a gross value of \$26,620,000.

"Of the 500 acres I have left out, from the lack of knowledge of the value of the

ground per cubic yard, 33 acres of the triangular piece at the south end, 30 acres along Collins Run, 59 acres of Gold Run, 15 acres along boundary at head of Gold Run, 25 acres in flat of Fishing Creek and, say, 17 acres along the northwest boundary line. I have left out these 170 acres because I did not test the ground. A considerable part of it should be just as good as the average. The flat of Gold Run must be tested before dumping waste material on it. This creek can, with the proper drilling, be easily tested, and should turn out the richest part of the property."

Apparently Mr. Dolan and his associates have undertaken the investigation of this property in a very thorough manner. It is to be hoped that their operations may prove as successful as anticipated, for, while it is a well-known fact that there is a great amount of gold in the Appalachian regions of the South, its development has never yet, except in rare cases, been thoroughly satisfactory since the old days prior to 1849, when the South led the country in the production of gold.

Building Up the South.

In response to a request for further information about the plan of the Southern Railway Co. to expand its advertising work for the South, President W. W. Finley wires the MANUFACTURERS' RECORD as follows:

"I have received your telegram of the 8th inst., asking for information relative to the plan of the Southern Railway Co. for advertising the South throughout the North and West and in Europe. The management of this company believes that the opportunities for agricultural and industrial development in the Southeastern States are unexcelled by those of any other section of the country; that the splendid progress made by the South in the last 30 years will continue, and that this progress may be materially accelerated by a wider dissemination of information as to the great variety and richness of Southern resources and by putting people in other sections who are looking for homes, for opportunities of employment and for investments into touch with Southern opportunities.

"We believe that the interests of this company are interwoven with those of the communities along our lines.

"In expanding our work of advertising the resources and opportunities of the South it shall be our policy in the future, as it has been in the past, to co-operate as closely as possible with Southern communities. From the Northeastern and North Central States there has been a constant stream of emigration to the Westward, and from the Central Western States there is a tendency for those seeking larger opportunities to move further West and into Canada. It is our purpose to endeavor to divert as much of this movement as possible to the Southern States east of the Mississippi River, advertising in the publications that will reach directly those classes of farmers and manufacturers whose movement to the South is mostly desired and presenting object-lessons of Southern agricultural and industrial resources and opportunities by exhibits at fairs and expositions.

"Our work in Europe will be handled by the agent of our land and industrial department in London. In endeavoring to secure immigration from Europe, as well as from the North and West, we shall always keep in touch with the public sentiment of each community, endeavoring to send to each locality only those classes of people whose coming will be welcomed by those living in that locality."

The recent campaign of Dr. S. A. Knapp, which was made under the aus-

pices of the Southern Railway Co., is but one of the many moves made by that company looking to the betterment of farm conditions in the South. Every Southern State reached by the Southern Railway was visited, and the several masterly, practical talks made by Dr. Knapp will be far-reaching in their effect. Many thousand farmers and others in the States visited were reached, either directly or indirectly, through the press, and thereby stimulated to practice better methods of farming.

Mr. M. V. Richards, the land and industrial agent of the Southern Railway, who suggested and organized the tour, in discussing the purposes and effect of the trip, said:

"The Southern Railway Co. has for years endeavored to do its part in promoting the further development of the country along its lines. Its policy is to treat all sections alike; co-operate with the people in every county in their effort to build up the country. The farming sections have not been overlooked. The company realizes the value of a full development of the rural districts in order to obtain the best development of the towns and cities which serve the country."

Mr. Richards rightly advocates the importance of the town people and the country people standing close together if the best results for all are to be obtained, and this recent trip tends to bring closer harmony between all classes. The merchant, manufacturer and farmer alike were interested in the talks made during the trip. Mr. Richards says that while the towns have a powerful attraction for the people on the farms, he believes that that feeling is at a minimum in the South, and that his company especially has in view promoting a sentiment among the people to "stick to the farm." He argues that the South will again be the great farm home section of the United States. He says: "The South is the ideal large and small farm home region. The standard of comfort and happiness is found to be higher and more general in the South than elsewhere on account of the attractive features of the rural home surroundings, when once developed, commensurate with the possibilities of that part of the country. Only those who have had to do with the practical side of promoting the development of the South appreciate the obstacles which have stood in the way of advancing the best interests of those already established in the South and drawing others to that section. We desire to inculcate in the minds of every young farmer in the South the idea that he should buy a piece of land and intelligently and industriously work his own holdings; that he should also be impressed with the importance of cultivating well a small area rather than farming poorly a large place."

"The avenues are numerous for obtaining reliable information concerning how to farm and make a profit, so that unsuccessful farmers in the South should be the rare exception."

New Bridge at Laredo.

The National Railways of Mexico, according to official information, will build a new bridge over the Rio Grande between Laredo, Tex., and New Laredo, Mex. It will consist of six deck spans of 175 feet each, with concrete piers and abutments. Including the approaches, it will require the construction of one kilometer of new line.

Values represented in building permits granted at Oklahoma City, Okla., last month aggregated \$534,878—more than double those of January, 1909.

Mineral Resources of the Birmingham District.

By ERNEST F. BURCHARD of the United States Geological Survey

[Written for the Manufacturers' Record.]

Birmingham was once called the Pittsburgh of the South. Birmingham no longer needs to shine by reflected light. She is no longer a "coming" city. She has already arrived at the city stage, and is a worthy namesake of the British Birmingham. The founders of the American Birmingham displayed clear vision and good judgment in bestowing upon the young Alabama mining center the name of a famous iron, coal and manufacturing community. Like her British cousin, our Birmingham is rich in the most important natural resources that contribute toward industrial development. Like the British city, the Alabama metropolis has had a rapid growth, and is now the acknowledged leader in the manufacture of iron and steel within her geographic province. There is still room for greatly-increased development at Birmingham, Ala.

listed as Bulletin No. 400, and a limited number of them are available for free distribution on application to the director of the United States Geological Survey, Washington, D. C. The results of the work in economic geology in the heart of the Birmingham district are epitomized in the 200 pages contained in this publication. The report is illustrated with maps in color, half-tone photographs and black and white drawings.

The term "Birmingham district" includes the region whose mining industries are tributary to those blast furnaces which are grouped about Birmingham as a center, indistinct from the furnaces which are grouped in the Attalla-Gadsden and the Anniston-Talladega districts. It extends as a long, narrow belt, about 75 miles long and 10 miles wide, trending northeast and southwest from the vicinity of Springville and Village Springs at the northeast to a point about eight miles below Vance at the southwest. Birmingham is near the middle of this area. Within the Birmingham district are very extensive deposits of red hematite, large though less extensive deposits of brown iron ore and important beds of coking coal and fluxing limestones and dolomite. In the report these materials are taken up



FIG. 1.—RED MOUNTAIN, SEEN FROM CHERT RIDGE, EAST OF GRASSELL, ALA., SHOWING FOUR SLOPE MINES OF FOSSIL GROUP, CONTINUOUS OPEN CUT WORKINGS OR STRIPPINGS, AND LOCATION OF ORE CARRYING RAILROAD NEAR CHICKAMAUGA-CLINTON CONTACT.
(From U. S. Geological Survey.)

although developments are coming thick and fast. The entrance of the United States Steel Corporation into the Birmingham district in 1907 affords a conspicuous example of the great confidence that has recently been placed in this district by conservative outside capitalists. Already some \$50,000,000 have been invested here, and in further evidence that this confidence has not been misplaced comes the recent announcement that the Steel Corporation is planning further vast improvements to cost several millions of dollars more. Among these improvements will be a lake for the storage of 2,500,000,000 gallons of water, two additional 100-ton basic open-hearth steel furnaces at its Ensley plant, a 3000-ton by-product coking plant and a \$3,000,000 wire and rod mill. Since the advent of the Steel Corporation into the district there have been evidences of greater activity and general prosperity on every hand. From the standpoint of the public at large, by which the products of the steel mills are used, it may be said that the Birmingham-made steel rail has no superior in the United States. This high standard of excellency is due to the fact that no expense has been spared by this company to perfect the process for bringing out the qualities of peculiar merit in the iron ores of the district.

Although the Steel Corporation utilizes practically all its own output of pig-iron

in the order named, the detailed discussion of the ores being preceded by a brief description of the general topographic and geologic features of the district.

Notes from some of the important features of the text will be given below.

Topography and Its Relations to Industrial Development

The city of Birmingham and its suburbs are built in the Birmingham valley region of Alabama. This region lies between the Cahaba coal field on the southeast and the Warrior coal field on the northwest. The valley topography is characterized by long, narrow, canoe-shaped troughs, in general parallel to each other and separated by well-defined ridges. The trend of the valleys is approximately N. 30° E. Their form is directly dependent on the geologic structure and lithology of the underlying rocks. They are developed mainly on the softest and most soluble rocks, along the axes of anticlines, the most enduring strata on the limbs of the folds forming the rims of the valleys. At distances of two to five miles apart openings or "gaps," some of which extend to the valley level, are cut at right angles through the ridges and afford convenient passageways between the valleys. Red Mountain (see Fig. 1), the main minor ridge within Birmingham Valley, furnishes nearly all the red ore mined in the district, and

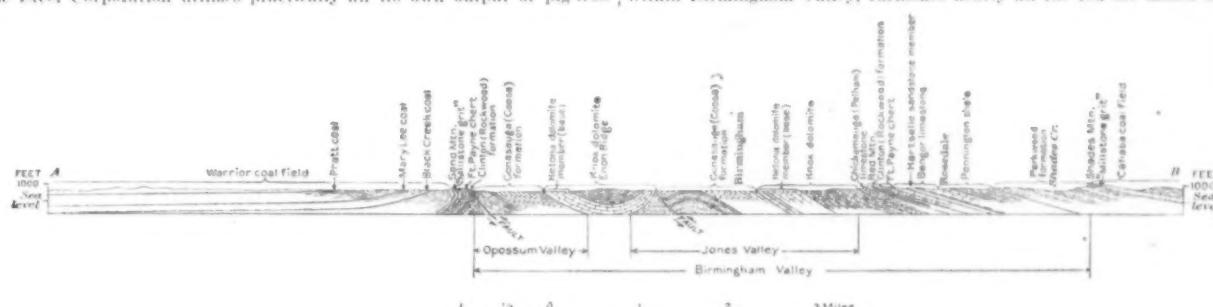


FIG. 2.—GEOLOGIC STRUCTURE SECTION ACROSS VALLEY AT BIRMINGHAM.
(From U. S. Geological Survey.)

at home, the product of more than half the blast furnaces in the district is shipped to other markets, mainly at the North. In this apparently insignificant fact lies at least one suggestion of greater manufacturing developments in the district. With cheap pig-iron, cheap and commodious manufacturing sites, cheap fuel, railway lines radiating from Birmingham in every direction like the spokes of a wheel, labor costs not excessive, a suppressed liquor traffic, a climate in which men can work out of doors 365 days in the year, a large and populous surrounding trade territory settled mainly by American-born citizens, with Birmingham a delightful and beautiful city in which to dwell and to do business, to an observer who is acquainted with the district the situation offers striking possibilities, not only for the establishment of additional steel works, but for the establishment of additional manufactories for all kinds of wares of iron and steel, such as structural steel, armor plate, guns, hardware and cutlery, springs, cars, engines, cables, automobile parts, mining machinery, gas and water pipe, etc. Birmingham is not situated on any large body of water, and developments have been retarded to a certain extent in the past by a limited water supply. It is expected that this situation will be relieved in the near future by projects that are now assured.

Geological Surveys in Birmingham District

During parts of each year from 1904 to 1909 some work has been carried on by members of the United States Geological Survey in the Birmingham district. New and detailed topographic maps have been made of several quadrangles, each of which comprise one-quarter of a square degree of the earth's surface, or approximately 1000 square miles area. On these topographic bases geologic maps have been constructed. Eventually a series of these maps will be published as geologic folios, or parts of the Geologic Atlas of the United States. From year to year, as the work progressed, short preliminary reports have been published on the iron ores and on the coal. Most recently the Survey has issued a bulletin entitled "Iron Ores, Fuels and Fluxes of the Birmingham District, Alabama," by E. F. Burchard, Chas. Butts and E. C. Eckel. This is

the Woodstock area, in the southwestern portion of the valley, produces the major part of the brown ore. Coking coal is mined in the Warrior coal field, only a few miles distant from the furnaces. Dolomite and limestone suitable for fluxing occur in the valley rocks below and above the red ore. The simple, regular topographic features of the valley have made accessible the ores and stone at practically every place where they are workable, and the enterprising railroad companies have quickly improved the opportunity for developing the region.

Geology.

Stratigraphy.—The rocks underlying the Birmingham district are shown in the following section:

Generalized Section of Rocks in the Birmingham District, Alabama.

Tertiary: Lafayette formation. Present in extreme southwestern part of district. Cretaceous: Tusconous formation. Iron brown iron ore.

	Feet.
Carboniferous:	
Pennsylvanian: Pottsville formation ("Coal Measures")	2,600-7,000
Mississippian:	
Parkwood formation.....	0-2,000
Pennington shale (39-390 feet).....	
Banger Limestone (670 feet): Includes Hartselle sandstone member (100+ feet).....	1,000+
Floyd shale.....	
Fort Payne chert.....	200-250
Devonian:	
Chattanooga shale.....	1-25
Frog Mountain sandstone.....	
Silurian: Clinton (Rockwood) formation—shale, sandstone and iron ore.....	250-300
Ordovician: Chickamauga (Pelham) limestone.....	200-1,000
Ordovician-Knox dolomite (includes at base Ketona dolomite member, 600 feet).....	3,200
Cambrian:	
Conasauga (Coosa) limestone.....	1,000
Rome (Montevallo) formation (great thickness).....	

Structure.—The geologic structure of Birmingham Valley is in general anticlinal, with a comparatively shallow syncline extending along the middle, as shown in Fig. 2.

The rocks in Red Mountain, which carries the red ores, dip S. E. at angles of 10° to 50°, but the rocks in the coal fields are generally flatter.

Character of the Red Ore.

The Clinton ore consists essentially of red hematite, intimately mixed with varying percentages of lime and silica. The hematite occurs in beds interstratified with shale and sandstone, and the strata mostly dip at angles varying from 10° to 50°. In places the ore is oolitic, and some beds are very fossiliferous. (See Figs. 3 and 4.) In places the ore beds are largely composed of fine to coarse silica pebbles, coated and cemented with ferric oxide. According as the ore is high or low in lime it is termed "hard" or "soft" ore. The distinction between the two varieties is based on differences in their chemical composition rather than on differences in hardness, although the terms "hard" and "soft" as originally applied to the ores probably had reference to their physical con-



FIG. 3.—SAMPLE OF CLINTON (FOSSIL) ORE FROM BIRMINGHAM.
(From U. S. Geological Survey.)

dition, since on the outcrop the soft ore is in general rather porous and friable. The unaltered ore is of the hard variety. The soft ore has resulted from the leaching by percolating waters of the soluble lime carbonate contained in the hard ore. This alteration occurs at the outcrop of the ore beds and down the dip to varying distances, depend-



FIG. 4.—SAMPLE OF CLINTON (OOLITIC) ORE FROM BIRMINGHAM.
(From U. S. Geological Survey.)

ing on the thickness and permeability of the cover. With the removal of the lime carbonate from the original ore the relative percentages of the remaining less soluble constituents, mainly iron oxide and silica, are increased. The following analyses show at the left a typical hard ore and at the right a typical soft ore, with intermediate or semi-hard grades between them, all from the same mine:

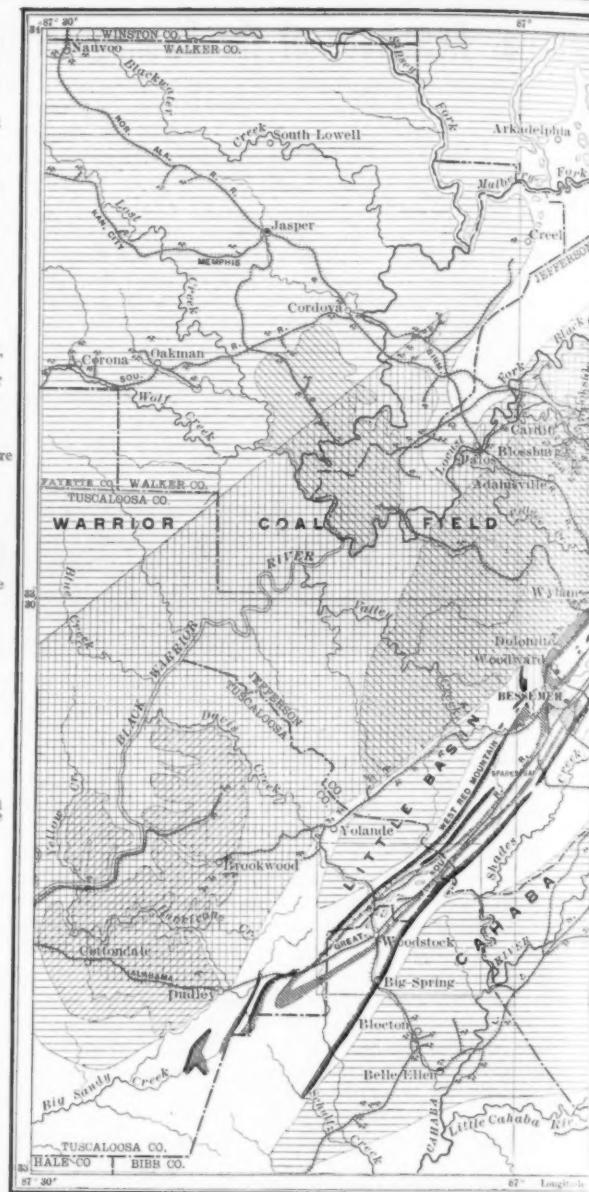
Analyses of Clinton Iron Ores, Showing Gradation from Hard to Soft Ore.

	1	2	3	4
Iron, metallic (Fe).....	37.00	45.70	50.44	54.70
Silica (SiO ₂).....	7.14	12.76	12.10	13.70
Alumina (Al ₂ O ₃).....	3.81	4.74	6.06	5.66
Lime (CaO).....	19.20	8.70	4.65	.50
Manganese (Mn).....	.23	.19	.21	.22
Sulphur (S).....	.08	.08	.07	.08
Phosphorus (P).....	.39	.49	.46	.19

Although the soft ore carries a higher percentage of iron, the hard ore has the advantage of containing almost, or, in places, quite enough lime to flux the silica that it contains. In case a hard ore contains more lime than is needed to flux its silica, soft ore or brown ore may be added to the burden to take up the excess of lime. Four beds of ore are known, but the only beds that are workable are the Irondale and Big seams. (See Fig. 5.)

Irondale Seam.—The workable portion of the Irondale seam extends from Morrow Gap to Hedona, about 51,000 feet, or nearly 10 miles. The range in thickness of the workable ore in the bed is between 3½ and 4½ feet. The hard ore carries 33 to 36 per cent. iron, 16 to 25 per cent. silica, and 8 to 14 per cent. lime. The ore is not self-fluxing. The thickness of the bed, so far as is known, does not diminish in the direction of the dip within the distance that it would be practicable to mine the ore from present slopes.

Big Seam.—The workable part of the Big seam, viz., its middle part in the north-



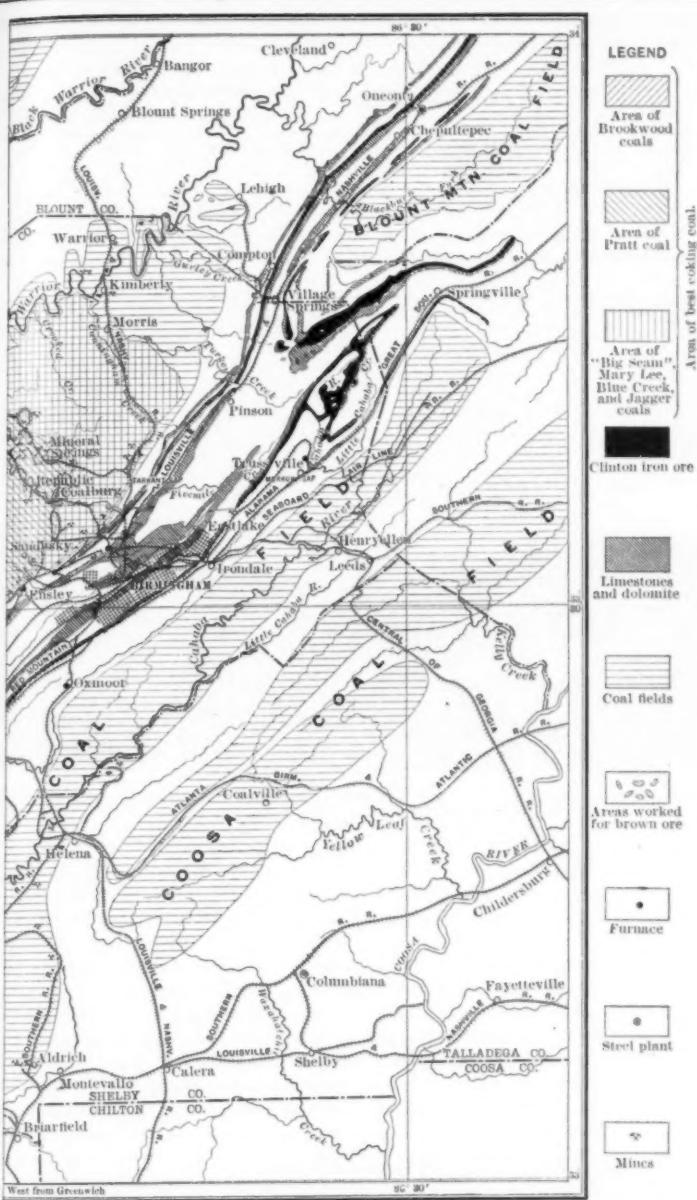
MAP OF BIRMINGHAM DISTRICT, SHOWING OUTLINES AND RELATIONS OF AREAS OF IRON ORES, COAL AND FLUXING STONE AND LOCATIONS OF RAILROADS, MINES, BLAST FURNACES AND STEEL PLANTS. SECTION I.
(From transactions of the American Institute of Mining Engineers.)

east end of the district and its upper bench farther southwest, extends from Bald Eagle to Sparks Gap, a distance of more than 20 miles along Red Mountain. The Big seam and the Irondale seam overlap between Bald Eagle and Hedona, so that the total length of iron-ore-bearing area along Red Mountain is approximately 24 miles. The thickness of the workable part of the bed ranges from 6½ to 12 feet, and the hard ore carries 34 to 39 per cent. iron, 10 to 26 per cent. silica and 9 to 20 per cent. lime. About the middle of the district the bed becomes separated into two benches, either by a parting along the bedding plane or by a shale bed, thickening gradually to the southwest. The middle of the Big seam is the workable part in the northeast end of the district (see Fig. 6), but the upper bench is of most importance throughout the rest of the area. In the southwest portion of the district the lower bench, which farther northeast is composed of ore that may eventually be mined, becomes a series of thin strata of lean ore and shale, and is consequently of no possible value, and finally the upper bench itself becomes shaly and carries only a very low-grade ore.

Conservation of Ore.

For a distance of more than 4½ miles in the middle of the district the lower bench of the Big seam contains 5 to 10 feet of hard ore, carrying 34 to 39 per cent. iron, 17 to 28 per cent. silica and 9 to 13 per cent. lime. In other words, it is an ore that is superior to some of the hard ore of the upper bench. There has been much discussion for and against the use of this ore, and it has been mined to some extent from slopes. To the casual observer it would appear that a flagrant waste of good ore was being permitted here, but to one familiar with local conditions it is evident that the question has been carefully considered with regard to practical mining and iron-making.

Where the ore mined at present from the upper bench is self-fluxing, it is obvious that the introduction of ore from the lower bench of the Big seam, which carries more silica and less lime, will necessitate the addition of fluxing stone to the furnace burdens, thereby increasing the cost of pig-iron. On the other hand, the use of this ore would prolong the productive period of the mine and convert into an asset a large quantity of ore that if passed over and neglected at present will be lost beyond recovery. Probably the only way that this ore can be won is by mining it in connection with the upper bench. When it is left, and the workings are finally robbed of their pillars of ore from the upper bench and the roof has caved, the lower ore is no longer available. To recover the lower ore at present would, however, introduce serious complications in mining. At the Tennessee Company's mines the slopes are cut in the lower bench of the seam about eight feet below the working level of the headings, so that tram cars of ore may be dumped over a tipple into the skip in the slope. If the lower bench of ore were mined also the slopes would have to be depressed eight feet below the bottom of this bench in order to accommodate skip haulage. This would necessitate maintaining for some distance a



MAP OF BIRMINGHAM DISTRICT, SHOWING OUTLINES AND RELATIONS OF AREAS OF IRON ORES, COAL AND FLUXING STONE AND LOCATIONS OF RAILROADS, MINES, BLAST FURNACES AND STEEL PLANTS. SECTION II. (From transactions of the American Institute of Mining Engineers.)

slope height of 25 to 28 feet, which would be excessive, and would involve deepening and retimbering the present slopes. Beyond the present faces the slopes might be driven below the parting, leaving the upper bench above slope. The matter of setting props to support the roof in the workings where 18 to 20 feet of ore are taken would also prove inconvenient. In slopes where tram haulage is employed the problem is simpler, since it is not necessary to depress the slope below the bottom of the ore that is being mined. Part of the ore from the lower bench can be obtained in either case by cutting the floors of the rooms lower. By this method, however, the floors become too flat to permit the ore to be shot down to the cars, and the expense of moving it is thereby increased.

Evidently the problem is discouraging, in view of present costs and conditions, but if for every ton of ore mined from the lower bench nearly a ton of ore in the upper bench might be saved for future use, it would seem worth while to carry the investigation as far as possible, even to the extent of equipping one slope to mine the whole seam on a scale that would enable the relative costs to be compared on a working basis.

Mining Methods.

There have been three stages in the development of the red-ore mines in the Birmingham district. The first stage consists of trenching the ore beds along the outcrop and mining the ore from open cuts. (See Fig. 7.)

The second stage of development combines the open cut and outside incline with underground work. A favorable relation exists between the Big and Irondale seams, and the topography wherever the dip of the Clinton strata is approximately the same as the southeast slope of the mountain. This slope is cut by narrow V-shaped ravines, and on both sides of many of these hollows the ore seams are exposed from the crest nearly to the foot of the ridge. Inclined tramways are built on the flanks of the ravines, and when the outcrop ore has been worked out entries are driven on the strike of the ore beds from each side of the ravines and the ore is mined from the upper side of the entry.

The third stage of mining, the one to which the majority of the workings in the Birmingham district have now attained, involves systematic underground work entirely. The general plan is very simple, comprising a main or central slope (see Figs. 8 and 9), driven generally on the dip, from which right and left headings, or entries, are turned off at regular intervals of 50 to 65 feet. About 30 feet of ore is mined from the upper side of the heading, and about 30 feet is left as a wall or pillow to protect the workings below until robbing is begun. Mules haul the trams to the main slope, up which the ore is moved by a cable to a tipple, below which it is crushed and loaded directly into

railroad cars bound for the furnace. (See Fig. 10.) Excessive water has been encountered in few of the workings of this type, except where the rocks are faulted, or fissured through caving of the roof.

Operation by vertical shafts is a fourth stage, which some of the mines in the basin east of Red Mountain may reach in the near future. The working face of the ore bed can be reached more directly by a vertical shaft 700 to 1000 feet in depth than by a slope three or four times that length. The initial expense of such a shaft as would be required would be far greater than that of a slope, but a much greater quantity of ore can be handled, and eventually the cost per ton may fall below that of slope mining.

Brown Ores.

Brown iron ores, consisting of hydrous iron oxides, are mined at two places in the Birmingham district, viz., near Woodstock, about 30 miles southwest of Birmingham, and at Champion, 35 miles northeast of the city.

Woodstock.—Nearly all the workable deposits of brown ore in the Woodstock district have been found directly associated with two groups of rocks: (a) Cambrian limestone and shale and Cambro-Ordovician dolomite, and (b) Cretaceous clays and Tertiary loam and gravel. The ore occurs in irregular masses in clay, sand, loam and gravel, at or near the contact of this unconsolidated material with the underlying limestone or dolomite beds. The deposits in places reach a thickness of 75 feet or more. The surface of the limestone is irregular, and many of the ore deposits seem to have

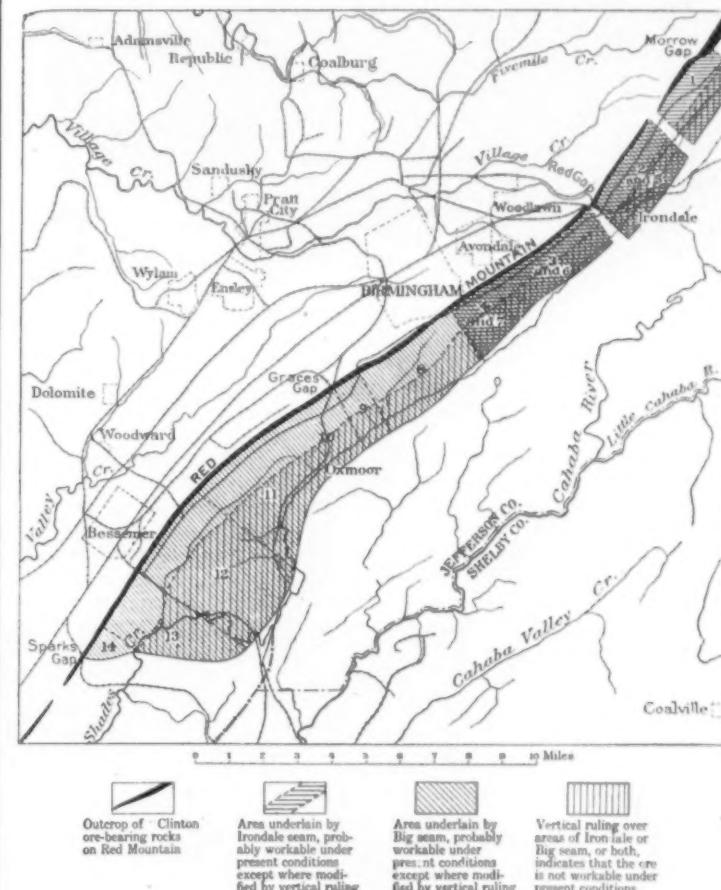


FIG. 5.—MAP SHOWING SUBDIVISIONS OF MAIN PORTION OF DIVISION A, BIRMINGHAM DISTRICT, ON WHICH ESTIMATES OF ORE TONNAGE ARE BASED. (From U. S. Geological Survey.)

been segregated at places where the surface is most uneven. Hollows or depressions in the limestone appear to have been favorable places either for the deposition of ore or for the collection and concentration of one debris. Associated with the ore masses are beds of variegated clay—white, pink, yellow and black in color. Separating the ore masses and the other unconsolidated deposits from the unaltered Cambrian limestone and shale is a cream-colored residual clay, termed "white horse" by the miners, ranging in thickness from a few inches to 35 feet. The proper identification of the "white horse" is of consequence in prospecting and mining, for it represents the lower limit to which the ore extends, and where the ore rests against a reef or knob of clay-covered limestone the clay represents a wall in that direction. In prospecting and mining this clay is frequently mistaken for the Cretaceous clay, or vice versa, and the ability to recognize each is of practical value for several reasons. In the first case, the removal of the residual clay would result only in reaching barren limestone beyond, while to abandon work in the Cretaceous clay might mean missing the discovery of a valuable mass of ore. The best criteria for differentiating the two types of clay are (a) the thin laminations and the variegated bright colors that are usually characteristic of the Cretaceous clay, and (b) the yellowish color and the folded, contorted structure of the original limestone that persists in most of the "white horse" clay.

Washed, picked and screened, brown ore in the Woodstock area carries in carload lots 30 to 50 per cent. metallic iron, 10 to 20 per cent. silica, 3.25 to 5 per cent. alumina and 5 to 7 per cent. of water. Manganese and phosphorus run irregularly. The manganese. Successful miners of brown ore have found that it is good economy to test 20 per cent. in one mass of ore, while on the opposite side of the hill it may be more than 1 per cent. By determining the high and low phosphorus portions of a deposit through careful sampling it is possible so to control shipments that they may carry a nearly uniform quantity of this element.

Prospecting for Brown Ore.—The surface, which is generally covered by a forest of pine and oaks, rarely affords reliable indications of the extent or value of the ore,

if any be present. Test pits or wells three to four feet in diameter must therefore be sunk. Successful miners of brown ore have found that it is good economy to test thoroughly a piece of ground before any development work is undertaken and that it is likewise advisable to push prospecting for some distance beyond the point where an ore body terminates, provided limestone underlies clays, sands and loam, such as those in which the ores are usually found. The cost of prospect pits 30 to 36 inches in diameter, not exceeding 50 feet in depth, ranges from 35 to 50 cents per foot. The value of a detailed topographic map in connection with prospecting of brown ore, as well as in later development work, cannot be overestimated. It is expensive, but it has been found to be a true economy where large developments are planned. The Woodward Iron Co. and the Tennessee Coal, Iron & Railroad Co. have undertaken detailed map-

The following table shows the quantity and value of red and of brown ore produced in Alabama and in the Birmingham district in 1907 and 1908:

Production of Iron Ore in Alabama and Birmingham District, 1907-8.

	Alabama.			Birmingham district.			Average value per ton. of State production.
	1907.	Long tons.	Value.	1908.	Long tons.	Value.	
Red ore.....	3,144,011	\$3,451,677	\$1 10	2,742,860	\$2,876,167	\$1 05	87.2
Brown ore.....	895,442	1,411,452	1 58	313,634	476,023	1 32	55
Red ore.....	2,775,903	3,046,217	1 00	2,597,651	2,799,623	1 08	93.2
Brown ore.....	938,535	1,312,685	1 37	387,265	527,968	1 36	49.4

Practically all the ore produced in the district is manufactured into pig-iron in the vicinity of Birmingham. The ore is handled by 29 coke furnaces. In general the fur-



FIG. 6.—UPPER TWO-THIRDS OF BIG SEAM, RUFFNER MINE, NO. 1, SHOWING DRIFT IN WORKABLE PART. (From U. S. Geological Survey.)

ping in the Woodstock and Champion districts. A step farther in the right direction would be the careful geologic mapping of the boundaries of the formations associated with the ores.

The probable northeast, northwest and southeast limits of deposits of value in this district are indicated on the map published in the bulletin.

There were in 1909 seven large mines in active operation, besides several minor workings.

Champion.—The brown-ore deposit at Champion lies along a northeast-southwest ridge. The ore overlies Cambro-Ordovician siliceous and cherty magnesian limestone. The ore is imbedded in tough red clay, mixed with much chert, and in certain test pits along the northwest margin of the deposit white quartz sand and water-worn gravel, characteristic of Lafayette deposits, have been found. On the southwest margin of the brown ore Clinton strata are faulted against the Cambro-Ordovician limestone,



FIG. 7.—UPPER WORKABLE PART OF BIG SEAM IN OPEN CUT AT HELEN BESS MINE, SHOWING JOINTING OF ORE BED. (From U. S. Geological Survey.)

faces run on a burden of coke, red ore, brown ore and dolomite or limestone, though certain of them at times use only a self-fluxing red ore. The ores of the district contain too much phosphorus to be converted into steel by the Bessemer process, but pig-iron from it is being very successfully used for basic open-hearth steel-making. The basic open-hearth process is employed by the Tennessee Coal, Iron & Railroad Co. at the Ensley rail mill, which consists of two 20 gross ton acid Bessemer converters and six 100 gross ton basic open-hearth tilting furnaces, together with one coal-reheating furnace, soaking pits, blooming mill, rail mill and finishing department, shops and auxiliaries. The entire output of the company's six coke furnaces is transferred as hot metal to the steel mill, where it is made into billets and rails. The Ensley mills are adjacent to the Pratt coal field, and thus occupy a peculiarly advantageous location, since most of the ore and fluxing materials are mined within a distance of 3 to 10 miles. Besides the Ensley plant, this company operates at Bessemer rolling mills having a capacity of 60,000 tons annually of bars, plates and light rails. The Southern Steel Co. also operates rolling mills at Ensley.

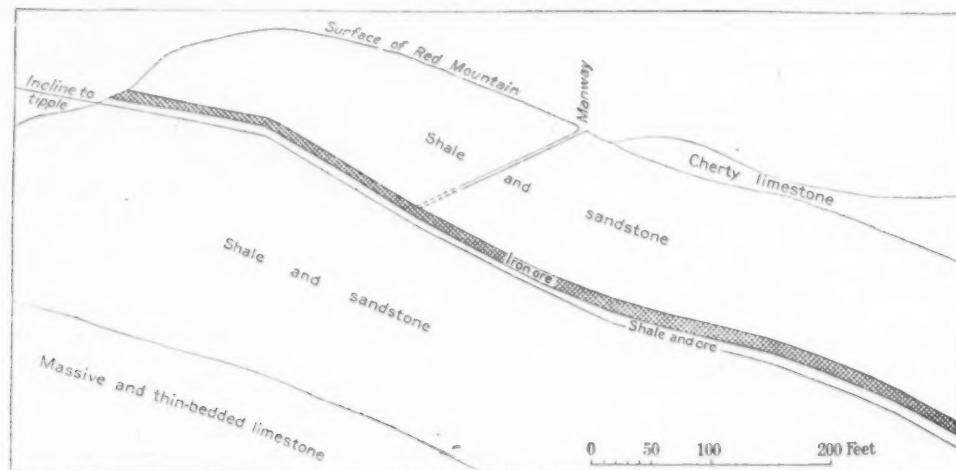


FIG. 8.—TYPICAL PROFILE OF SLOPE ON RED MOUNTAIN, STARTING ON OUTCROP. (From U. S. Geological Survey.)

This limestone is seamed with minute fractures, and where weathered the non-cherty portion decomposes to a light-colored, friable, sandy material rather than to a clay. Less of this residuum or "white horse" underlies the ore here than at Woodstock. The masses of ore-bearing clay lie in depressions on the limestone surface and are banked up against reefs and boulders of the limestone. The wash ore in this deposit is comparatively rich, and the workings have been recently reopened after an idleness of many years. The ore after concentration carries from 43 to 52 per cent. metallic iron, 5 to 18 per cent. silicon, 2 to 4 per cent. alumina, .6 to .85 per cent. manganese, .18 to .3 per cent. phosphorus, and 6 to 7 per cent. water. As at present handled, one cubic yard of dirt appears to yield generally from .60 to .75 ton of ore. There is practically no stripping.

One mine is operated at Champion. A new log washer has been built with a capacity of 500 to 600 long tons per day, and two steam shovels are operated to mine the ore. In the washing process the ore passes by gravity from the top of the flume until it is loaded into cars on a siding of the Louisville & Nashville Railroad.

Production and Consumption of Iron Ore.

Since 1894 Alabama has held third place among the iron-producing States.

Estimates of Ore Reserves.

In preparing Bulletin 400 estimates of the red-ore reserves in Red Mountain and under Shades Valley, from Morrow Gap to Sparks Gap, were made. Many factors were considered, based on all the facts that could be obtained concerning the extent of outcrop of the ore beds, their average thickness at the outcrop, the minimum thickness to which the ore may be worked, the percentage of recoverable ore and the average percentage of metallic iron in the hard ore.

The results indicated a total of 358,470,700 long tons of ore available under present conditions in the main portion of the Birmingham district, and it is probable that one-half billion tons would be reached by any estimate that considered carefully the reserves in the other divisions of the district not included in the estimate. The estimates show also a reserve of 146,024,700 long tons of ore in the lower bench of the Big seam, and of 292,401,400 long tons in the main part of the Big seam in the eastern part of Shades Valley—a total of 438,426,100 long tons of red ore not available under present conditions. When it is considered that the annual production of red ore in Alabama has not yet exceeded 3,200,000 long tons, the results of the estimate indicate that the iron ore at present available in this district promises to last more than 100 years longer at the

present rate of output. The foregoing estimate, which gives a grand total of 796,896,800 long tons of red ore in the Birmingham district, as compared with the preliminary estimate of 1,000,000,000 long tons of red ore in Alabama, previously published by E. C. Eckel in the *Engineering Magazine*, 1906, appears fairly consistent, considering that the Birmingham district probably contains 80 per cent. of the red ore of the State.

Fuel.

The Coking-Coal Beds.—The fuel used in the blast furnaces of Alabama is coke, at present made exclusively from coal mined in the Warrior coal field. Most of the coke

groups. Assuming that 80 per cent. of the total coal in the ground will be mined, the yield would be 3,366,262,400 short tons. Assuming further that the coal will yield 60 per cent. of coke, the total amount of coke that could be made from this coal would be 2,019,757,240 short tons. On the basis of 1.8 tons of coke to a ton of pig-iron, this quantity of coke would produce 1,122,087,355 short tons of pig-iron. To produce this amount of iron at the present rate of production would take 625 years, but if the production should be doubled every 20 years it would take only 87 years. As shown above, the estimated total tonnage of iron ore falls considerably below the iron-ore equivalent that might be smelted by the coal estimated to be present here.

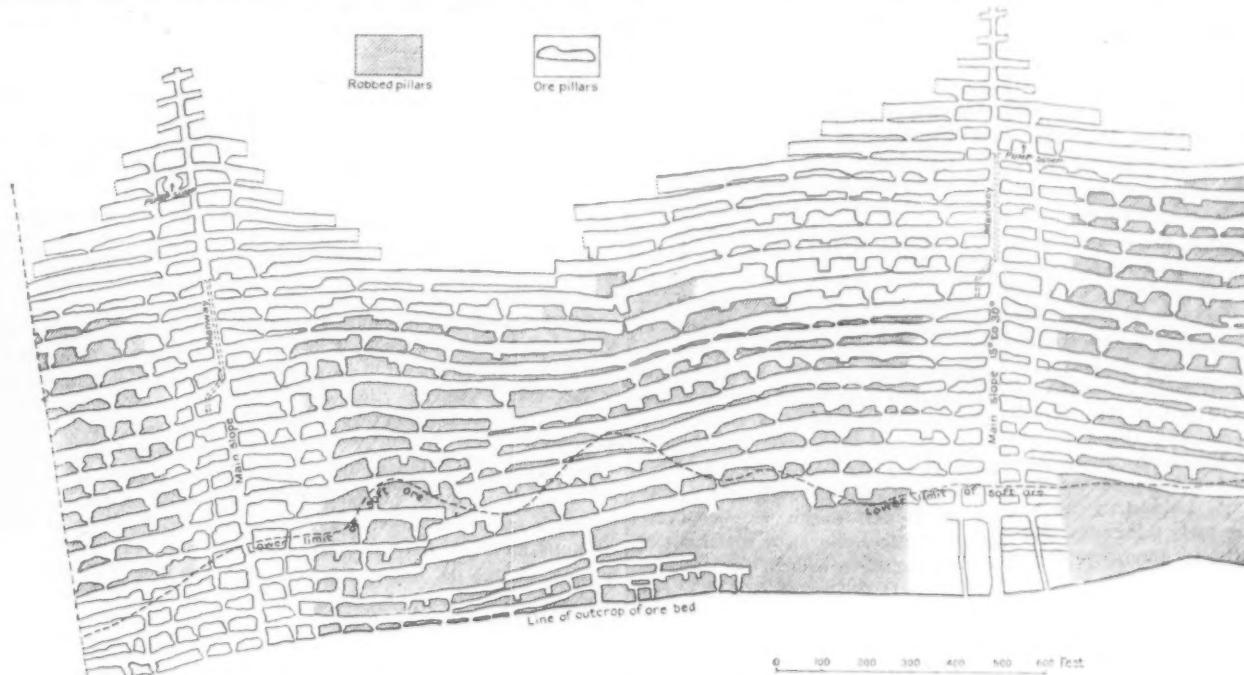


FIG. 9.—TYPICAL PLAN OF TWO ADJACENT SLOPES ON RED MOUNTAIN DRIVEN DIRECTLY ON DIP OF BEDS.
(From U. S. Geological Survey.)

is made from the coal of the Pratt and Mary Lee beds. The last-mentioned bed is commonly known in the region as the "Big seam." A smaller amount of coke is made from the three beds of the Brookwood group of coals mined in the vicinity of Brookwood. The Newcastle bed, of limited extent near Newcastle, is also a good coking coal. Coal from a number of the beds of the Calhoun coal field yields coke.

Quantity of Coking Coal.—Taking the areas and thicknesses given below, together with the fact that a bed of coal one foot thick and an acre in extent, or an acre-foot of

Fluxes.

Both limestone and dolomite are used for flux in this district, though dolomite is much more extensively used. The rocks suitable for flux are as follows, beginning at the lowest:

Conasauga (Coosa) limestone. This rock is the least suitable of all, as it is apt to contain too much silica, alumina and iron oxide, although in places relatively high-calcium samples have been found. *Ketona dolomite, or basal Knox dolomite.* This rock



FIGURE 10.—TYPICAL UNDERGROUND MINING OPERATIONS, UPPER BENCH OF BIG SEAM IN RED MOUNTAIN; FACE OF RIGHT-HAND HEADING. PHOTOGRAPH FURNISHED BY COURTESY OF TENNESSEE COAL, IRON & RAILROAD CO.
(From U. S. Geological Survey.)

density 1.35, contains approximately 1800 short tons of coal, there is obtained the following tonnage in the ground for each of the beds or groups:

Estimated Tonnage of Coking Coals, Warrior Field, Alabama.

	Sq. miles.	Ft. In.	Short tons.
Mary Lee group.....	580	4 10	3,207,168,000
Pratt bed.....	230	3 6	827,360,000
Brookwood group.....	50	3	160,800,000
			4,195,328,000

In this computation it is assumed that approximately 100,000,000 tons of Pratt coal have been worked out, leaving a remainder of 827,360,000 tons, as given above. No allowance has been made for the amount worked out in the Mary Lee and Brookwood

is a high-magnesian stone, relatively free of impurities. It has an extensive outcrop, and is quarried at several places, such as at Ketona, North Birmingham, and Thomas. The *Chickamauga limestone* is a relatively high-calcium stone, but generally carries 3 to 6 per cent. of silica. The *Bangor limestone* is the purest limestone found in the district, the lime carbonate generally exceeding 96 per cent. It is quarried at Bangor, Blount Springs, and Dale, Ala. In order to produce a slag suitable for the manufacture of Portland cement, blast furnaces must run on a high-calcium stone such as this.

The age, stratigraphic relations and thickness of these limestones are shown in the table above, and the work of the Survey in mapping the distribution of the beds gives assurance that the district is well supplied with limestone for many other industrial purposes besides iron-making.

Pennsylvania Investors in Louisiana Irrigation

[Special Correspondence Manufacturers' Record.]

Washington, La., February 9.

Brought here in two special Pullman cars from Johnstown, Pa., are 37 capitalists from the vicinity of Johnstown, who have come to view the development work completed up to date by the Union Irrigation Co. and to make an inspection of the country surrounding. Of the 37 people comprising the Pennsylvania visitors, 30 have never been here before. They left Johnstown on the afternoon of February 5, and after stopping off at several places en route, including Monday afternoon and Tuesday in New Orleans, they have proceeded to Washington, La., in accordance with a program that includes trips to Opelousas, Eunice, Mamou and Crowley. After spending three days in this section they will start on their return trip to their homes. It has been the history of the several Pennsylvania excursions of the past into this section that almost, without exception, they have become greatly impressed with the possibilities for development here and with the plan of operation of the Union Irrigation Co. With the present party there are a number of ladies, who are themselves as enthusiastic as the men.

The list of the party includes Mr. and Mrs. John McDermott, Hiram Bowman, E. A. Nowag, J. P. Reininger, L. L. Smith, A. J. Strayes, Miss Clio Nowag, Paul G. Nowag and Mr. and Mrs. D. B. Wertz, Johnstown; Charles F. Zimmerman, D. E. Long, Dr. J. H. Gardner, George Steinbaugh and C. E. Maurer, Stoyestown; Mr. and Mrs. C. A. Sharbaugh and Mrs. J. W. Sharbaugh, Carrollton; L. A. Meyers and W. E. Trostle, Hooversville; Josiah Meyers and Hiram Hoffman, Hollsopple; Henry Shaffer and Mr. and Mrs. L. T. Gardner, Boswell; Mrs. C. H. Schmucker and C. J. Long, Friedens; Scott Lohr, Davidsonville; Jacob Hartz, Morgantown; S. U. Shober, Somerset; Mrs. John E. Mostoller, Kimmelman; J. O. Nissley, Lancaster; N. K. Brubaker, Liberty, and Jacob M. Glessner, Shanksville.

Great enthusiasm was expressed by the visitors regarding the character of the soil in this section and the possibilities for profitable enterprise which the plans of the irrigation company comprise. The party visited the pumping plant of the irrigation company, near the city, and everyone was much impressed with the magnitude of the undertaking.

The irrigation company is now building the first five miles of the main canal, which will have a present width of 275 feet, and by the first of May there will be eight miles of lateral canals 75 feet wide.

The discharge basin at the beginning of the main canal is completed, as are also the pumping-plant buildings and the boiler-houses. These buildings are of concrete, steel and brick, the pumping plant being 85x50 feet in diameter and the boiler-house 50x75 feet.

The pump pit is dug down to sea-level, which, by the way, gives a very material advantage in the economical operation of the pumping plant. An open canal is constructed from the pumping plant to Bayou Courtaleau, which stream flows into the Atchafalaya River, which, in turn, joins the Red River shortly before that stream flows into the Mississippi. This insures an unlimited amount of water, for should there be a shortage through drought of the water in either Bayou Courtaleau, the Atchafalaya or the Red rivers, it would still be possible to secure an unlimited supply of water from the Mississippi River.

The machinery of the irrigation company is on the ground, 40 carloads having been received, and the installation has begun. There are 47 carloads of machinery, and possibly by the time this letter is in print the remaining seven carloads will be on the ground, as they are en route at the time of writing. On the remarkably substantial pump pit and engine foundations—in the construction of which 2000 yards of concrete and a mile of railroad iron has been used—the installation of the machinery is now well under way. The centrifugal pump, built by the R. D. Wood Company of Philadelphia, will show, when completed, a height of 24 feet from the base to the top of the volute. There will be a seven-foot suction, with a six-foot discharge, giving a capacity of 200,000,000 U. S. gallons per each 24 hours. The impeller of the pump weighs 42,500 pounds. It will swing on a main-line shaft of solid forged steel, 22 inches in diameter, weighing 36,000 pounds. The pump is to be direct connected with two tandem-compound condensing engines of 1000 horse-power each, which were built by the Russell Engine Co. of Massillon, O. The steam plant contains four water-tube boilers, built by the E. Keeler Company of Williamsport, Pa. The condenser apparatus is of the latest and most approved design, which makes the plant one of the most efficient and economical of its kind that has ever been built.

An incident in the construction is a 50-foot traveling crane from the Cleveland Crane & Car Co., which makes it possible to handle the heavy machinery of the plant without inconvenience.

Another feature of interest is the way in which the plant has been laid out for future extension. The present development is merely the first unit in the company's plans. The buildings have all been designed and constructed with reference to enlargements, so that the plant can be extended as required by merely adding additional buildings.

The vastly important fact in this development is that the basin is located at the highest point in the prairie district of Southwest Louisiana, so that water may be distributed by gravity as the canals and laterals are extended. The first installation will serve to irrigate some 20,000 acres. With the extension of the laterals it will be possible to take care of 40,000 acres with the present machinery. The lay of the land is such that with the future extension of the canals and laterals more than 1,000,000 acres may be irrigated from this one plant and with a single management, whereas at the present time there are more than 35 irrigation companies in operation in the Crowley district, covering 50 main and relief pumping plants, which require separate managements and employees to operate each plant, and still having a capacity to irrigate only about 250,000 acres of land.

It is pointed out as one of the strong features of this company that, notwithstanding the wastefulness of the present operations in the irrigated district of Southern Louisiana, every one of the companies mentioned has succeeded, and many of them in a most marvelous way. It is maintained that the Union Irrigation Co., by being able to concentrate all of its machinery at one point and under one management, possesses a great advantage in being able to largely reduce operating expenses.

It is proposed to have this plant ready for operation by the first of May, when the water will be turned on, and it is the plan of the company to extend the canal

system and enlarge the pumping plant from year to year as conditions will warrant.

Every feature of the present work has been carried out on most substantial and permanent lines. The machinery is of the best and everything connected with the development is of the same high class. The levee and earthworks, done by L. R. Constant of Bunkie, La., is one of the finest pieces of levee work to be found anywhere.

The estimated cost of the first installation of canals and pumping plant, including rights of way and lands on which to build the plant, is \$500,000. The company is capitalized for \$1,600,000. A sufficient amount of stock has been subscribed to complete the first development.

The plan of the company contemplates furnishing water to owners of land to be irrigated, and as rent for the water furnished the company is to receive one-fifth of the crop of rice produced. It is estimated that the income of the company, on the basis of the cultivation of 20,000 acres of land, will be more than \$110,000 a year.

In addition to rice-growing, the inauguration of the irrigation enterprise in this section means a development in every agricultural line. There are no finer lands in the world than the prairie lands around Opelousas and this section. It is a fine silt, so free from grit that horses are almost never shod here, and its fertility is phenomenal. These lands are adapted to a wide variety of agricultural products.

They will raise not only rice, but corn, cotton, cane, vegetables and almost every variety of farm produce. It is a good cattle and hog country. Alfalfa does well here, and, as a matter of fact, the installation of this irrigation enterprise means the converting of this "Evangeline" country into a regular Garden of Eden. It is one of the oldest settled portions of Louisiana, but large acreages have never been put in cultivation. With a certainty of an ample water supply, which the irrigation project will give, it is inevitable that not only the staple crops will be raised, but intensified farming will be indulged in. While a great argument can be made on the line of the adaptability of this section to rice-growing after the installation of the irrigation plant, at the same time there is no disposition to limit the development here to any one crop. There will undoubtedly be a vast acreage in rice-growing in view of the great profits that have attended the development of this industry in Southwestern Louisiana. It is a matter of common knowledge that the populous city of Crowley has been built from the foundations to a place of 15,000 people within 25 years past simply on the rice development of that district, and the lands, formerly in slight demand at a dollar or much less per acre, have, since the rice development, become so valuable that \$100 an acre is frequently refused for them, and from practically nothing a few years ago the rice crop of Louisiana has been built up to a value of something like \$25,000,000 a year. Louisiana raises more than 55 per cent. of all the rice produced in the United States. In the United States there is raised two-thirds of all the rice marketed in the country. The consumption of rice is increasing not only in the total of pounds, but in the pounds per capita every year, for whereas during the period between 1900 and 1902 the consumption per capita was about four and one-quarter pounds, it had grown to something over seven pounds per capita in 1907, and the total increase each year is figured at something like 40,000,000 pounds, or a half-pound per man, woman and child of the population of the United

States. It is being realized more and more that rice is a very valuable and nutritious food; that it is the best "ballast" for all foods, vegetables, meats, etc., and that it will make more easily digestible for delicate stomachs every dish with which it is combined. Nevertheless, rice is simply one of the crops which it is proposed to stimulate the production of in this section, and, furthermore, it is proposed to maintain a supervision over the kind of seed planted, so that there will be no deterioration in the rice crop here, as has been experienced in some sections of the rice-growing States.

With the initial inauguration of the irrigation work there will unquestionably be a very marked activity in the land development of this section. In anticipation of this inevitable development there have been five new lines of railroads built into this section within the last few years. The Gould interests have built two lines, the Rock Island and the Frisco lines two others, and the Southern Pacific has extended a branch into this territory. While there has been no great movement in the way of immigration, there has been continual inquiry, and land values have very materially advanced in view of the activity that is bound to come. For instance, unoccupied lands that formerly sold for \$2.50 an acre are now held at \$25, and in the vicinity of Washington and Opelousas lands that were formerly held at \$25 are now priced at \$100 an acre.

The present development is the culmination of the plans on which J. Franklin Schell has been working without intermission for the last 10 years. In the face of discouraging obstacles, which would have appalled any man of less indomitable persistence, he has worked out the details of the enterprise until victory is now in sight. The heroism of his work can be understood and comprehended only by those who have investigated the almost innumerable discouragements which have been encountered by Mr. Schell and which have been overcome by him alone. In the face of untoward financial conditions in the country, in spite of the opposition of unfriendly elements, beneath a burden of discouragement and opposition which would have broken down anyone without a will of iron, Schell has been hammering away, night and day, accumulating a mass of information about every detail of the business which is amazing, and at the same time doing all the work of financing the proposition. His mainstay has been the substantial Dutch farmers and financial people of Pennsylvania. Four-fifths of the money he has secured for the enterprise is Pennsylvania money, and most of it is from Lancaster county. Louisiana has contributed some, but a very small minority compared with the amount Pennsylvanians have put up. It is to the Pennsylvania Dutch that Schell has made his strongest appeal, and it is these thrifty yeomen who have made possible the success of the enterprise.

ALBERT PHENIS.

Street Improvements to Cost \$860,000

Oklahoma City is proceeding with extensive street improvements and arranging for additional work. It is advertising for bids from week to week, as indicated in the Construction Department of the MANUFACTURERS' RECORD, and on March 7 will open proposals for a large quantity of sheet-asphalt laying. The total amount of the yardage to be awarded on that date is 262,215, or nearly 16 miles, the cost of which will approximate \$860,000. This does not include a double amount for boulevard streets, which will have a double driveway. The progressiveness of the new State of Oklahoma and its cities is readily indicated by the above statement.

Possibilities in Louisiana Reclamation Work.

[Special Correspondence Manufacturers' Record.]

New Orleans, La., February 12.

Plans for drainage work and development of farming lands by the St. Charles Land Co. in the vicinity of New Orleans, mention of which was briefly made in these columns last week, indicate an enterprise of decided importance, not alone on account of the magnitude of the undertaking, but also because of the personnel of the company, all of them outsiders from the North, and most of them men of large influence and ample means, with a full knowledge and appreciation of drainage propositions.

Briefly, the project contemplates the immediate development of 3200 acres, a part of the nearly 14,000 acres owned by the St. Charles Land Co. in St. Charles parish—at its nearest point, 15 miles from New Orleans. The stockholders in the company are mainly from Bureau county, Illinois. A number of these stockholders have just been making an extended investigation of reclaimed lands and lands in the process of reclamation, and they return home full of enthusiasm over the situation and the outlook. In addition to G. A. McWilliams, president of the company, and L. B. Langworthy, financial agent, there were in the party M. E. Williams, W. T. Eddy, F. E. Quinn, R. P. Stone, W. C. Morris, Henry Williams, C. C. Gill, Frank Sutton, all of Bureau county, Illinois; Hugo Freels of Chicago and John A. Kruse, engineer, Chicago.

I talked with a number of the visitors about their impressions of the enterprise and the country. M. E. Williams, in the course of my interview with him, said that he had been visiting Southern Louisiana at various times for the past seven or eight years, and that he was first attracted to the possibilities of the reclamation work at Pointe-a-la-Hache, when the protecting levy on the 40 arpents line at that place was being constructed, but it was not until the spring of 1909 that he began to make an investigation with the view to investing his money in the reclamation work. In the latter part of May, 1909, in company with Mr. Langworthy, he visited the various reclamations at West End, Lockport, Raceland, Paradis, etc., and what he then saw convinced him that the reclamation of these lands was bound to become one of the most profitable undertakings in this country; not only profitable to the individual investors, but one that would add enormously to the wealth of the State of Louisiana and the country at large. Since May, 1909, Mr. Williams said that he had visited these reclamation projects on two different occasions, and each visit impressed him more deeply and strengthened his faith in the ultimate outcome. "These lands are the richest in the world," Mr. Williams said, "and will grow a greater variety of products than any other lands in the United States, and the climate I regard as well-nigh ideal. You have some warm weather here in the South, but I visited Southern Louisiana during the hottest weather of last season, or at the time that we were having the hottest weather in the North, and I found New Orleans much more comfortable than Chicago, and the Raceland Prairie far more comfortable than Bureau county. As a matter of fact, the temperature was several degrees lower. I have carefully investigated the most important question of health, and I am convinced that this lower delta country is one of the most healthful sections in the United States. The doctor down here seems to be practically out of business."

B. F. Basch said that his attention was first attracted to this country some seven

years ago when he was making a trip through the South and was passing from New Orleans to Houston, Tex. He told about what he had seen at that time at Bayou Lafourche, and of his astonishment at the apparent richness of the soil in that locality. "But," said Mr. Basch, "I didn't know until quite recently that these vast swampy areas could be reclaimed. What I have seen in the last three or four days, however, has settled all questions of doubt with me that it is the best and greatest proposition I have ever seen. The soil of these reclaimed lands is simply wonderful. Its richness will last for the next hundred years without the addition of fertilizer. While up in Bureau county farms are covered with snow and ice, down here they are harvesting garden truck and are preparing their fields for planting and putting in crops for the coming season. The productive capacity of these lands is almost beyond comprehension."

C. C. Gill said: "Mr. Langworthy and others had told me something about the reclamation work down here, and I was prepared when I came for great things, and I think my expectations were rather high, but I desire to say that what I have seen is way beyond anything that I anticipated. It is simply a wonderful work and a wonderful country."

W. L. Eddy, whose home is at Amboy, Ill., said that the reclaimed lands were the richest he had ever seen. He compared them with the reclaimed lands in the West, and said that everything was in favor of the drained lands in this lower delta country—the markets, the means of transportation by water, the climate, everything combined made them, he believed, the most desirable farm lands to be found anywhere in the United States.

F. E. Quinn said that he had heard something about the reclaimed lands in Southern Louisiana, but had paid little attention to what he heard. What he has seen, however, has filled him with astonishment. He said he had wondered how it was that these lands had not been reclaimed before and brought under cultivation, and he predicted that in the near future the reclaimable lands of Southern Louisiana would be producing more crops than any other equal area in the United States, if not in the world.

W. C. Norris said that he had been a swamp land man for a great many years, and that he owned 10,000 acres of valuable swamp land at Horison, Wis., on which they were just starting the work of drainage, but from what he had seen of the lands around New Orleans and what he had heard about the climate, the nearness to market, everything combined, led him to believe that within a reasonably short time these would be the most valuable lands in America.

R. P. Stone said that these were the best lands he had ever seen, and that he intended to buy some for himself, and any farmer who saw these lands would feel just as he does—that they are the richest lands to be found anywhere.

Hugo Freels was born and raised in the northern part of Germany, where the land was reclaimed from the Rhine River and the North Sea. He said:

"The reclaimed lands of North Germany sell at from \$500 to \$1000 per acre, while they can be made to produce but one crop a year, and these crops have a value of but from \$25 to \$30 an acre, and thus they are not to be compared with these lands in any way. I can't understand why, when these lands are so rich, they are sold at such low prices. I believe that within five years these lands will be

sold for a better price than the reclaimed lands of Germany."

Frank Sutton spoke in the highest terms of what he had seen. He also spoke highly of the people whom he had met, as did every member of the party. Mr. Sutton said: "We from the North didn't understand the conditions that exist here, or we would have been here before. We like the country and we like the people."

John A. Kruse, consulting engineer in charge of the drainage work on the St. Charles tract, not only stands high in his profession, but is one of the best-posted men generally upon the South and land reclamation that I have met. He has been familiar with conditions in the lower delta for a number of years, and has gathered a vast fund of information. In speaking of the reclaimed lands of Southern Louisiana Mr. Kruse said:

"So far as production and variety of crops are concerned, there are no lands in the United States that equal these. Compared with the high-priced lands of Southern California—and I mean by high-priced lands from \$500 to \$2000 an acre—

everything is in favor of these reclaimed swamp lands. In the first place, the lands are infinitely richer than the lands of Southern California, and the climate and health conditions all the year round are better than those of Southern California. The work, however, of reclaiming these lands must be carefully and intelligently done; the drainage for each acre should be comprehensive enough to relieve the lands from excessive rainfall, and it must be understood that if lands are properly leveed excessive rainfall is the only thing to contend with. My observations, covering a period of seven or eight years, have convinced me that the pumping problem is insignificant, and under favorable conditions, even with the highest rainfall—from 70 to 75 inches per annum—the cost should not exceed a maximum of 40 cents per acre. Compare this with the cost of water on irrigated lands, and it means simply nothing. These lands in the staple crops have a productive capacity—for instance, in cane—from \$100 to \$200 an acre, and in corn and the accompanying crops that will be raised on the land the same year, of from \$75 to \$300 per acre, and in truck farming from \$300 to \$500 per acre. I am convinced that the citrus fruits—oranges, grape fruit, tangerines, mandarines, etc.—can be raised not only successfully, but with great profit, and if the same care is given the citrus fruits here that is given to these fruits raised in Southern California the profits will be much larger. For instance, today Louisiana navel oranges are selling in the New Orleans market, retail, at from 75 cents to \$1 per dozen, while California navels of the same size can be bought at from 35 to 50 cents a dozen (about half the price), to which freight must be added, so that the Louisiana Creole sweet oranges find the best market at the very highest price.

"There are many other things that should be considered here. For instance, in the laying out of reclamation projects rural communities should be established where schools and churches can be conveniently located and social life most highly developed. The bayous and streams are filled with an abundance of the finest game fish; ducks and all kinds of water fowl are most abundant. This is the greatest country in the world for the poor man. He can live the year around out of his garden, and if he is frugal and industrious he can buy a home and pay for it out of the soil almost without knowing it."

Mr. Kruse further said the tract of land owned by the St. Charles Land Co. is absolutely free from any indebtedness of any kind, and that the work of reclamation was being pushed as rapidly as money

and intelligence could push it, and he hoped to have the first district, containing something over 3000 acres, ready for the plow by November of this year. "Along the bayou front," he said, "we will lay out the town of Beulah. The bayou is sometimes known as Black Prince Bayou, or that part of Bayou des Allemands lying north of Black Prince Island. This bayou is one of the most beautiful streams to be found anywhere. The banks are lined with live oak trees and palmettos. The stream along this frontage varies from 300 to 600 feet in width. Any tract of land in this area will not be more than a mile and a half from the navigable waters when the drainage system is completed. To the north, along the Southern Pacific road, the land has been drained and is under cultivation, and is held at from \$200 to \$300 per acre, and there is no question in my mind that within two years the lands of the St. Charles Land Co. will be sold at as high or even a higher price."

The personnel of the officers of the St. Charles Land Co. is deserving of special mention. Its president and general manager is G. A. McWilliams, one of the best-known swamp drainage men in the United States. Mr. McWilliams, although comparatively a young man, owns and operates 14 dredges in various States North and South. He has made an exhaustive study of drainage in Southern Louisiana, and is an authority on the subject. He is a man of large means, who has made his money out of swamp drainage, and he is an expert in that line of work.

John A. Kruse, the engineer, stands at the head of his profession in both drainage and hydrographic work, and in this undertaking he is assisted by an able corps of competent men.

The secretary, M. E. Williams, is one of the leading farmers of Bureau county, and is an investor in land drainage, especially the work in Southern Louisiana.

The treasurer, H. N. Sager, was for two years the president of the Board of Trade for the city of Chicago, and is at the head of the commission house of J. H. Dole & Co., Chicago.

The vice-president and attorney for the company, Charles Carroll, is at the head of the law firm of Carroll, Henderson & Carroll of New Orleans. These (excepting Mr. Kruse), together with L. R. Davis of Princeton, Ill., constitute the board of directors. Mr. Davis is a prominent business man, and has made a careful study of the reclamation work of the South, and is an enthusiast on that question. As a matter of fact, the entire crowd constituting the St. Charles Land Co. is one of the most intelligent, enthusiastic and pushing aggregations of Northern men that ever became interested in the South.

A considerable area of the first district development of 3200 acres has already been sold, and at the present price at which this land is selling the investors will make upward of 300 per cent. on their investment. The rapidly advancing prices which these lands are expected to bring will doubtless increase largely the estimated profits.

ALBERT PHENIS.

WHERE HEALTH IS FOUND.

Attractions and Opportunities at Mineral Wells.

[Special Correspondence Manufacturers' Record.]

Mineral Wells, Tex., February 1.

This city has the unique distinction of being built on mineral waters. This is a literal truth, and the birth of it dates back to 1879, when a band of homeseekers, headed by Judge J. A. Lynch, were overtaken just as the sun sank behind the western mountain top bordering a little valley, surrounded on the east, north and west by a range of rugged hills rising to

a height of 250 to 300 feet. The human part of that little caravan, after selecting a spot for their camp, began to look for water for man and beast, and finding none and being too weary to resume their journey in quest of water, decided to dig for it. They were rewarded by finding the most wonderful mineral waters perhaps of this or of any other country.

Judge Lynch and his little party, being attracted by the beauty of their surroundings, and some of their people being really sick, decided to remain a short time for rest and to allow their stock to recuperate, and being entirely ignorant of the existence of any curative property of the water, were most agreeably surprised to notice the very rapid recovery of their sick as well as the peculiarly exhilarating effect upon every member of their party, and finally correctly attributed all this to some mineral properties of the water. It did not take long for all this to reach the settlements, and soon it became known all through north central Texas, and people came here and camped in wagons and tents for weeks and months, and with few exceptions received either partial or complete relief from their ailments.

But this condition could not last, and men were quick to see the opportunity for building a great health resort, and promptly took up the work, and today Mineral Wells is one of the most liberally patronized places of its kind in the United States. It is neither an exclusively winter or exclusively summer resort, but an all-the-year health resort, and there is not a day in the year when hundreds or thousands of people may not be seen at the various pavilions of the numerous companies who, since the value of these waters have become so widely known, have sunk a great number of wells and erected beautiful and costly pavilions, hotels and all manner of structures for the comfort and pleasure of visitors, whether in quest of health or pleasure. There is today nearly 100 hotels, with accommodations for 10 to 100 guests. But there is great need here of a large, modern hotel of 300 to 500 rooms, built and equipped for the wealthy classes and to cater to their wants exclusively.

There are at present from 50 to 60 wells in use, owned and operated by six to eight different parties, and yielding enough water to supply from 100,000 to 200,000 people daily throughout the year.

One peculiarity of conditions here is the fact that pure freestone water is obtained on the same ground that the mineral water comes from, one being found about 50 feet below the other. At the Colonial Hotel a well was drilled and freestone water obtained for drinking and cooking purposes, then the derrick moved less than 10 feet and mineral water found, in order that guests may have the benefit of both.

About 1905 building operations began to assume city proportions. Thus within the last five years perhaps 80 per cent. of the substantial buildings of every character have been erected.

There are few other towns of 8000 people in this or any other State having more or a better class of business houses. The city owns its water and sewer system, the latter having two pipe lines, which convey sewerage to Brazos River, five miles below the city. The standpipe, having dimensions of 24 feet diameter and 50 feet high, is planted on the side of the hill east of the business part of the city, and about 150 feet above the street of the business section, thus giving sufficient pressure to throw water over the tallest building in the city.

There is also a fine electric light, power and ice plant owned by private parties. This company also owns and operates the electric street cars of the city.

A large cotton-oil mill is another enter-

prise of Mineral Wells, while just north of town is the plant of the Crushed Stone & Lime Co., with a capacity of 400 tons a day. This latter is a very important enterprise here, as it provides the rock part of material for use in the construction of buildings, street and sidewalk work. The entire business section, including that portion of the city where the mineral wells and pleasure pavilions are located, and all the best portions of the residence sections have wide concrete sidewalks. Col. A. A. Goodwin is general manager of the Crushed Stone & Lime Co., and is an enthusiastic and untiring worker for the advancement of the material interests of Mineral Wells.

There is one daily, the *Daily Index*, and two weekly papers published here, and the editor of the *Index* is also president of the Mineral Wells Commercial Club, with J. W. Register as secretary. These two gentlemen, backed by a very live directorate, are doing wonders for their city, and their aspirations are boundless. Not only so, but they are further backed by an unusually enterprising clientele of businessmen, and therefore it is quite within the bounds of reason to anticipate the year 1920 will show a population of 20,000, and possibly 25,000, and a truly cosmopolitan city. There is already much wealth here. Half a dozen millionaires, nearly every one of whom came here for the avowed purpose of cheating the grim reaper out of a few years, and have succeeded, are now permanently domiciled here and using their wealth for the improvement of the material conditions of their adopted home.

According to reports of the railroad ticket agents, there has been for the past four or five years an average annual attendance of 150,000 people at Mineral Wells. This means 12,000 a month. It is said that these visitors spend in the city an average of \$50 each, or \$7,500,000 per annum. It can readily be seen what, with such an income, the business possibilities of a town of only 8000 residents may be.

There are innumerable opportunities of a purely business character. In the immediate vicinity of the city are extensive deposits of an excellent grade of coal, building stone, both brick and potter's clays, and cedar timber, and the people stand ready to encourage experienced men in converting any of these latent resources into manufactured products. What is needed is not only men of some ready means, but especially men of experience in handling these resources. The home people have no desire to monopolize any of these enterprises, but would willingly invest a reasonable sum with practical men in the effort to make this a manufacturing city as well as a health resort.

The Commercial Club is conducting an active campaign of advertising the advantages and opportunities to be found here, and interested parties would do well to make a careful investigation, which can be done by addressing the president or secretary.

WM. C. CLOYD.

FAIR INQUIRY FOR PIG.

The Week's Developments in the Alabama Iron Market.

[Special Cor. Manufacturers' Record.]

Birmingham, Ala., February 14.

While there was quite a little iron sold the past week, mostly in small lots ranging from 100 to 200 tons for prompt and first quarter delivery, and some few sales for first half, it could not be said that conditions are in as satisfactory shape as anticipated by this time. If there is really a base price, it is nearer \$14 per ton at the furnace than any other figures at present. It is understood that there has been some shading of these figures under certain conditions which probably had to be met. One

interest sold a round lot of 500 tons on basis of \$14 per ton at the furnace, and a majority of sales, we believe, were made on that basis. A fair inquiry is reported, and while some of the companies have made sales through the third quarter, on the whole they do not seem inclined to solicit business at present figures on such delivery. Fourteen dollars and fifty cents per ton is being asked for third quarter delivery. If a firm offer were made on this basis for iron for delivery the balance of the year, in our opinion, it would be accepted provided it carried an attractive tonnage and came from the proper party. While it is a fact that there are a number of large consumers who have not yet covered themselves for their first half requirements, and have manifested practically no concern in that direction thus far, it is true that iron in the district today is being shipped out on about an equal basis with output, and no disposition on the part of customers to have shipments held up. This will have considerable bearing on the immediate future market, for it is not the policy of a well-regulated concern to permit its raw material supply to border on a period of only three months ahead.

On account of present condition of the pig-iron market, the manufacturers of heavy pipe have been in a position to shade recent prices when necessary to meet certain contingencies. Weather conditions the past week have been rather rough in certain sections, but local concerns report their order-books in very fair shape. Some good tonnage lots were placed in the Middle West, particularly in the Chicago district and in the State of Michigan. A total letting in that section is reported of something like \$8,000 to 10,000 tons. Following prices are quoted per net ton f. o. b. cars here: Four-inch, \$25; 6, 8 and 10-inch, \$23; 12-inch and over, average of \$22, with \$1 a ton extra for gas pipe; fittings, \$60 per ton at the works here.

There is very little that can be said of the old-material market. Dealers have been taking advantage of suitable weather to gather scrap, and in some cases have piled it on their yards to await further developments in the general situation. Fair shipments, however, are reported, and following prices are quoted per gross ton f. o. b. cars Birmingham:

Old iron axles, \$20 to \$20.50.
Old iron rails, \$15.75 to \$16.25.
Old steel axles, \$17.75 to \$18.25.
No. 1 railroad wrought, \$14 to \$14.50.
No. 2 railroad wrought, \$12 to \$12.50.
Dealers' wrought, \$12 to \$12.50.
Old steel rails, \$12.50 to \$13.
No. 1 machinery, \$12.50 to \$13.
No. 1 steel, \$13 to \$13.50.
Old standard car wheels, \$13.75 to \$14.25.

Light castings, stove plate, \$9.75 to \$10.25.

Cast borings, \$6 to \$6.25.

The Bullard Car Door Equipment Co., whose plant is located in Woodlawn, Ala., will put its plant in operation this week to turn out patent car doors to fill the orders already in hand. Quite a few orders were booked before site was selected for the plant, several of the railroad companies having made a thorough investigation of the patent and pronounced it good.

The Tennessee Coal, Iron & Railroad Co. is tearing away the old shell and accessories for the old No. 1 furnace at Ensley, making room for a modern basic iron producer of heavy capacity. This is the last furnace of the entire battery at this point to be rebuilt from the ground up.

The big basic stack of the Southern Iron & Steel Co. at Alabama City was blown in last week, the product being stored for use in the open-hearth furnaces of the company, to be used in the manufacture of wire, nails, etc., at the new plant.

News has just been received from the receiver appointed in New York to handle the affairs of the Central Foundry Co., to the effect that the temporary embarrassment of the company will not materially affect the operation of the Southern plants, which are located at Anniston, Ala., Bessemer, Ala., and South Pittsburg, Tenn.; also the blast furnace at Holt, Ala. The plants, it is understood, will be operated by the receiver in charge.

MADE IN CHATTANOOGA.

Opening of the Manufacturers' Association's Permanent Exhibit.

[Special Cor. Manufacturers' Record.]
Chattanooga, Tenn., February 15.

The formal opening this evening of the permanent exhibit of home-made goods under the auspices of the Chattanooga Manufacturers' Association calls attention to the activity and enterprise which have characterized the organization since its birth seven years ago. Discussing the project, Mr. Charles W. Howard, former president of the association, and now a member of the board of governors, says,

"The Chattanooga Manufacturers' Association was organized in 1903 at the suggestion of Mr. C. D. Mitchell, president of the Chattanooga Plow Co., who served the Manufacturers' Association two years as its president. The organization was built on the same lines as those in vogue in the National Manufacturers' Association, and to which organization some thirty-odd members of the local association belong. It was stated at the time of organization that it was for the purpose of fostering and developing existing industries and encouraging the establishment of new plants, especially those that would be required to complete the list of products needed in the territory finding its best market in Chattanooga." There was another object, that of bringing about a closer and more intimate knowledge of the manufacturers of Chattanooga. The first year of shoulder rubbing proved the wisdom of the organizers of the association. Manufacturers who for years knew their neighbor largely by reputation, became well acquainted with him; they found that there was much in common; that it frequently happened that orders could be secured by the method known to writers as 'collaborating.' It is an old thought, that one good deed suggests another. It was so in this.

"At the end of the first year a freight bureau was added, to which all claims of every nature against the railway companies were filed for adjustment. At first the railway officials sidestepped, but by gentle treatment, soft persuasion and care that no unjust claim be allowed to pass the freight bureau agent and the three members of the association comprising the traffic committee, they were won over to see that it was no 'hidden mine,' that when a claim bearing the stamp of the Manufacturers' Association reached them it was properly made out, together with all papers bearing on the case and a brief and intelligent reason for its payment, so that today this bureau is the clearing-house for claims of every nature against the railway companies and in favor of the members of the Chattanooga Manufacturers' Association.

All this was accomplished in six months after the formation of the bureau, about five years ago. It worked so well and was received by the railway management of the different lines entering Chattanooga so favorably that the traffic committee concluded it would go a little further and put the bureau in shape to quote freight rates to its members. Like the claim department, this was successful. The freight bureau of the association now employs five first-class clerks and quotes from 7000 to 10,000 rates to the member-

ship monthly, and files and collects thousands of dollars in claims monthly.

"We are 'chummy' with the railroad people. When we want a thing we first ascertain if we are entitled to it. If so, we go after it mildly, but resolutely. If we are entitled to it, naturally we have a good argument, and so far it has prevailed. We do not mention this as an evidence of our cleverness in 'coming it' over the railway people, but simply to point to the fact that reasonable requests for rate adjustments are promptly met. And why should they not be? A railroad without a manufacturer would be as much of a curiosity as a manufacturer without a railroad. I do not know of a single case of appeal for rate adjustment to the Interstate Commerce Commission by a Chattanooga manufacturer. I doubt if this can be said of a city of like manufacturing importance.

"Treating the railways (I mean the good ones) as you want them to treat you is a virtue that hath its own reward." Having done so well so far, the board of governors decided in May, 1909, that a permanent exhibit of Chattanooga-made goods would be a good thing. The thought was threshed out, and in the threshing gained strength, but a permanent exhibit meant a change of location, more room and facilities for properly displaying the goods. The board decided that this could be done to a better advantage if the association owned its own building. The Chattanooga Manufacturers' Home Co. was then organized under the laws of Tennessee (as the charter of the Manufacturers' Association did not permit its holding real estate). The Home Company was organized, the same board of governors and officers serving in each association. The Home Company then bought the four-story brownstone building on Broad street, between 8th and 9th, for which it paid \$40,000, and has expended for putting it in proper shape for the exhibit about \$5000 more. The total sum was arranged for by selling a 10-year 6 per cent. gold bond, secured by the property itself. These bonds were only sold to members of the Manufacturers' Association, the denomination ranging from \$100 to \$500 each, the interest payable semi-annually. The Manufacturers' Association has a membership of about 220. Nearly every member took one or more of the bonds. There were other ways of raising the money suggested, but this method appealed to the directors more than any other, for the reason that it gave to the members a very vital interest in the welfare of the association. Resignations in organizations of this class are cheap, and come from many different reasons, none of them, as a rule, very good. The man with only a \$100 bond will be slower to resign than he would be if he did not have the bond. The interest on these bonds is secured by selling space at so much per square foot to the exhibitors. Before the enterprise was fully decided upon a sufficient amount of space was sold to guarantee the payment of the interest. Since that time all of the space has been sold, and all of it to Chattanooga manufacturers, 7000 square feet in all.

"This opening will be in the nature of an eye-opener to our own citizens, who have not the slightest conception (although they live within the corporate limits of Chattanooga) of the magnitude or range of articles manufactured in Chattanooga.

"This building is provided with a passenger and freight elevator. It will have perfect attention in the way of care of exhibits. A competent man will be placed in charge. Each floor is provided with a telephone, and the doors will be open to the public from 8 A. M. until 5.30 P. M. Out-of-town buyers will be taken to the exhibit; suitable tablets will be placed in the depots and the leading hotels calling atten-

tion to the fact that there is such an exhibit and giving its location. It is the only exhibit of the kind in the United States. The membership does not expect to grow fabulously rich in this unique method of exhibiting their wares, but do expect benefits due a pioneer movement."

The permanent exhibits in the building are:

Brown, Hull & Co., brick.

Terrell-Hedges Company, electric fixtures and dynamos.

Chickamauga Cement Co., cement and hydrated lime.

Gager Lime & Manufacturing Co., lime and lime products.

J. F. Dale Sand Co., building and plastering sands.

MacGowan-Cooke Printing Co., printers and binders.

Chattanooga Paint Co., paints and paint rocks.

McLean Lumber Co., yellow poplar and white oak lumber.

King-Baxter Lumber Co., building material, mantels, doors.

Union Lumber Co., model frame dwelling.

Williams & Voris Lumber Co., oak lumber.

Magill Hardware Co., plows and cane mills.

Chattanooga Wagon Co., wagons.

J. M. Card Lumber Co., oak and poplar lumber.

Chamberlin-Freeman Construction Co., tile and concrete floors.

Chattanooga Wheelbarrow Co., wheelbarrows and scrapes.

Ross-Meehan Foundry Co., bells, cog chains and stoves.

Chattanooga Plow Co., plows and hay presses.

John Troutt & Co., monuments and granite slabs.

Chattanooga Coffin & Casket Co., coffins and caskets.

Chattanooga Stove Co., stoves.

Mountain City Stove & Manufacturing Co., stoves and ranges.

Tennessee Stove Works, stoves and ranges.

Southern Queen Range Manufacturing Co., ranges, steam warmers and water tanks.

T. H. Payne & Co., desks, filing cabinets and office fixtures.

Modern Canner Co., home canning outfit.

The Loomis & Hart Manufacturing Co., furniture, dressers and wardrobes.

Chattanooga Furniture Co., center tables and wardrobes.

Parham's Mattress Factory, mattresses and pillows.

Chattanooga Chair Co., chairs.

M. A. Hunt & Co., bed springs, bedsteads and cots.

Thatcher Manufacturing Co., costumers and hall trees.

Acme Kitchen Furniture Co., kitchen furniture.

Chattanooga Iron and Wire Works, ornamental iron work and office gratings.

Converse Bridge Co., structural steel and cement bases.

Vacuum Dyeing Machine Co., dyeing machines.

Acme Box Co., packing boxes and crates.

Tennessee Can Co., cans and solder.

Hercules Manufacturing Co., acetylene-gas generators.

Blackman's Stock Remedy Co., salt brick and stock medicine.

Thacher Medicine Co., patent medicines. Tennessee Awning & Tent Co., tents and awnings.

Park Woolen Mills, woolen goods.

Davis Hosiery Mills, hosiery.

Richmond Spinning Co., cotton yarns.

Chattanooga Medicine Co., patent medicines.

Richmond Hosiery Mills, hosiery.

Extract Wool & Merino Co., samples of extracted wool.

Peerless Woolen Mills, woolen cloth.

Chattanooga Roofing & Foundry Co., metal shingles, roofing, ceiling and grates.

American Brake Shoe & Foundry Co., railroad brakes.

Black-Draught Stock Medicine Co., stock medicine.

Citico Furnace Co., pig-iron.

New Soddy Coal Co., steam and domestic coal.

New Etna Coal Co., blacksmith, steam and domestic coal.

Chattanooga Bottle & Glass Manufacturing Co., bottles and ornamental glass.

Chattanooga Bakery, cakes and crackers.

Mountain City Mill Co., flour.

Star Box & Printing Co., pasteboard boxes.

Consignees Favorite Box Co., shipping boxes.

Magic Food Co., stock and poultry foods.

American Manufacturing Co., hardware specialties.

Bridgeport Woodenware Manufacturing Co., fruit and vegetable crates.

Lookout Planing Mills, interior wood-work.

Nixon Mining Drill Co., mining drills.

Jones Machine Co., mining drills.

Wheland Machine Works, engines, saw-mill machinery and pulleys.

Street Bros. Machine Works, shingle and planing machines.

Chattanooga Machinery Co., band-saw mills and woodworking machinery and keysetters.

The Cahill Iron Works, enamel ware.

Wheland Corrugating Co., sheet metal and sheet-metal products.

Chattanooga Implement & Manufacturing Co., plows, pea hullers, hay presses and grate castings.

Columbian Iron Works, fire plugs and water meters.

Gustafson Manufacturing Co., tram cars and pulleys.

Walsh & Weidner Boiler Co., boilers, stacks and sheet-iron work.

The Casey-Hedges Company, boilers, heaters and plumbers' cast-iron supplies.

Sloan & Co., builders' supplies, brick and cement.

Frictionless Metal Co., babbitt metal.

Chattanooga Sewer Pipe & Fire-Brick Co., fire-brick roofing tile and sewer pipe.

T. B. COLBURN.

IN TEXAS BLACK LAND.

Thriving Conditions in and Near Itasca.

[Special Cor. Manufacturers' Record.]

Itasca, Tex., January 29.

This progressive little city of about 3000 people is situated on the Missouri, Kansas & Texas Railroad, midway between Waco and Fort Worth, being 44 miles from each point, and on the high dividing ridge between the famous Brazos River on the west and Trinity River on the east, about equal distance from both streams.

Itasca is about 25 years old, but its greatest growth has been made within the last 8 or 10 years. Indeed, the most important improvements do not date back more than five years. Its trade territory is essentially an agricultural district, and is one of the richest black land sections in Texas. Under normal conditions these lands yield about the following per acre per annum: Two to three tons of hay, such as millet and alfalfa; wheat, 20 to 40 bushels; corn, 40 to 65 bushels; oats, 40 to 100 bushels, and cotton, two-thirds to one bale per acre. From 15,000 to 17,000 bales of cotton are shipped from here annually, and from 100 to 250 car-loads of grain.

As an evidence of the volume of business done here it is claimed that the average monthly freights handled by the railroad at this point for the past two years have been about 2,475,000 pounds. It will be understood that for a town no larger than Itasca such tonnage would indicate a fine business. There are here nearly 100 concerns which go to make up a volume of business requiring that traffic. Among the enterprises are:

The Itasca Roller Mill & Elevator Co., having a storage capacity of 22,000 bushels of grain and a daily capacity of both meal and flour of 150 barrels.

An electric-light and power plant, of which the citizens speak in the highest terms on account of the very efficient service it renders.

The Itasca Cotton-Oil Mills, with a capital of \$100,000 and a daily capacity of 60 tons of seed, giving employment to about 25 men.

Four cotton gins, fully equipped with the most modern appliances for ginning cotton, and having a daily capacity of 300 bales in 10 hours, but it very often happens that they are required to run day and night during the busy season when the cotton crop is large.

One of the most important features of a modern town is its water supply and water-works system, and in this respect Itasca is fully abreast of this age of modern public utilities. The source of supply is an artesian well, 1800 feet deep, which furnishes pure free-stone water sufficient for 10,000 to 15,000 people for all purposes; that is, for household, sewerage and steam purposes. This is the property of the city, and is furnished to citizens on the basis of 58½ cents per month for four-room dwellings, or a fraction less than 15 cents a room.

A fire department, having ample apparatus for fighting fire, and a well-trained fire company of 25 members, insures adequate fire protection and the minimum rate of insurance. One very noticeable feature of the fire department is the immense standpipe, visible for miles around, and which provides, when full, a pressure of approximately 60 pounds, thus insuring through the many fire hydrants, even without the aid of the fire engine or pumps, ample fire protection.

But the most important industry in this busy town is the cotton mill of the Itasca Cotton Manufacturing Co. The capital stock of this company is owned almost exclusively by citizens of Itasca. For the first year or two of its existence the business was run at a loss, but the men at the head of the enterprise believed there was money in the business if they could only master the difficulties which confronted them, and they had the courage to back their judgment with their money and overcame every obstacle to success. They now have the satisfaction of possessing one of the most profitable manufacturing enterprises in the State. This mill is run exclusively on sheeting, drills and ducks of the various grades and weights. It employs about 125 operatives, with an annual payroll of approximately \$40,000, fully 90 per cent. of which goes right into the channels of trade in Itasca; that is, in addition to the sum paid for cotton which is here converted into a merchantable commodity. The cotton-mill premises consist of 75 acres of land on which the factory, power-house and warehouse stand, and besides it now has about 50 tenement-houses for its operatives. The entire property represents an investment of \$215,000, and has for the past few years paid handsome dividends.

I have been preaching the cotton-mill gospel in Texas for years, and I have not found a more forceful argument in favor of the establishment of cotton mills in

Texas than is afforded by the success of this particular mill. There are today some 17 cotton mills in the State, and if there is one that is not a paying enterprise it is solely attributable to the lack of proper management. Like the Itasca mill, that will eventually be overcome, and I hope yet to see hundreds of cotton mills here to consume a portion of the products of our cotton fields. That is not only a possibility, but a necessity, and just as sure as men continue to grow cotton, just that sure are we destined to become a great cotton manufacturing State.

Perhaps one of the most potent factors contributing to the progress of the town is the intelligence of its citizens, and that has been made possible here by its splendid educational facilities. The Itasca school district embraces an area of 15 square miles. With an enrollment of 489 pupils, ample school buildings and teachers, each holding a first-grade certificate, sufficient opportunity is afforded the youth for acquiring an education calculated to fit them for all the duties of business men and citizenship. Just recently \$35,000 of 5 per cent 40-year bonds were voted, to be used to erect a new high-school building for the increasing population. Besides the fine public schools is the Switzer Woman's College and Conservatory of Music. The usual curriculum, including the fine arts and music, is taught in this college, and it is supported liberally by the people of this and neighboring towns.

The moral and religious character of the people is upheld and fostered through eight organizations, representing the leading denominations, each of which owns its own house of worship.

Two banks, both national, having an aggregate capital and surplus of \$166,000 and deposits of \$563,000, attend to financial matters of the various commercial and industrial interests.

The land, loan, abstract and insurance business are looked after by Ed. Wilkinson & Co., who own one of the prettiest offices in this section. This company is a very strong concern, and does a large business. Just now it is building three handsome brick business houses, each of which is already engaged at a rental which will yield a handsome dividend on the investment. The members of this firm are stockholders in numerous enterprises of Itasca, and are among the most enterprising citizens of their city.

The Itasca Board of Trade is an active and important factor in the upbuilding of this young city. H. E. Chiles is its president, and is also cashier of the Itasca National Bank, while J. C. Butts is the secretary. Mr. Butts is also editor and business manager at the *Itasca Item*, an ably edited six-column, eight-page, all home print paper. Wm. C. CLOYD.

WHY SETTLERS COME.

Advance Made in Strawberry Growing in North Carolina.

[Special Cor. Manufacturers' Record.]
Raleigh, N. C., February 14.

North Carolina has in 13 years come to be a great strawberry-growing State, and five counties—Columbus, Wayne, Duplin, Pender and Sampson—produce 90 per cent. of all the berries grown in this State for market. The first strawberries were grown in Columbus county in 1897, and that season only 600 crates, that is, four carloads, were shipped from Chadbourn, while in a few years the shipments increased to 1623 carloads, and the average during the past five years has been 1360 cars, with annual receipts reaching the great figure of \$500,000.

Your correspondent had an interview with Mr. J. A. Brown of Chadbourn, who has done so much for the promotion of Columbus county and all that part of the

State as to immigration, berry-growing, truck-growing and general development.

Mr. Brown was asked about the number of settlers who have come into Columbus county from the North and Northwest. He says that about 1000 have been settled in that section, and while a few have moved away, others have taken their places, so that this new population has remained at all times up to the highest number. These new settlers have succeeded well, and have made admirable citizens. The inflow of this desirable population has not continued on such a large scale since the people of Columbus have ceased advertising, yet there is continual growth. The reason for not advertising further is that all the land which they had for sale has been disposed of, and, of course, there is no further incentive for advertising the section, so far as the landholders are individually concerned. Mr. Brown declares that he knows no other place in the South where immigrants from other States have settled in as great volume and have been so uniformly progressive and prosperous. He says the immigration question is one which has to be followed up and worked continually to keep it growing. F. A. OLDS.

BUILDING AT CHARLESTON.

Half a Million Dollars' Worth of Work Now Under Way.

[Special Cor. Manufacturers' Record.]

Charleston, W. Va., February 12.

Charleston is girding up her loins in readiness to take advantage of the era of advance that promises to set in with the opening of spring, and it will be disappointing alike to prophets and laymen if she is not found leading the procession of progress from flag-fall to finish. Indeed, there has been no cessation in the forward movement in this city for the past eight years, and if it has been more marked at one time than another, that time has been the 12 months last past. Building has been rapid and constant. Residences, business blocks and public improvements have gone upward and forward continually, through good and evil report, amid flush times and during periods of depression elsewhere, because of the invincible faith which the people have maintained as to the future of the city and the surrounding country from which it draws sustenance.

There are now in course of construction here more than half a million dollars' worth of business buildings, some about completed, others in various degrees of undoneness. Chief among these are the Stephenson & Alderson office building, the National City Bank building, the wholesale grocery building of Ruffner Bros., the combined business and hotel building belonging to H. L. Wehrle and his associates, in which the Commercial Bank will be located; the six-story building for the Payne Shoe Co., and the big warehouse for Lewis, Hubbard & Co. Of these the Ruffner Bros. building, a six-story structure of reinforced concrete, faced with brick, is just about completed and the owners are moving in. It is unquestionably the most complete and best-constructed building of the kind in the State. Like everything done by this great firm of wholesale grocers, the structure is solid and substantial in every particular—built to last. The floors are of twice the strength usually given to floors intended for the same purpose; the cross-beams are heavier than is held to be necessary, and the supporting pillars stand almost twice as thick on the foundation.

As someone remarked the other day in discussing this building, the only trouble is that when the time comes that a more modern structure will be found desirable for the same location it will require the

aid of drills and dynamite to get rid of this one.

The new residence of the City National Bank is rapidly nearing completion, and will be a very handsome structure when done. It is also a reinforced-concrete building, faced with white stone and gray pressed brick. It is eight stories in height, with a banking-room on the first floor and office-rooms on all the others. Both these buildings were erected by the Moore Construction Co., and both speak loudly in praise not only of the material from which they are constructed, but also of their constructors.

The same company is also engaged in putting in the foundation for the Stephenson & Alderson building. This is to be a 12-story structure of steel, granite and brick, standing on 32 concrete piers which reach down more than 50 feet to the solid rock. It will have two business-rooms on the first floor, while the 11 stories above will be given over to offices. A basement and subcellar will complete the capacity of the building. The frame will be of steel, the first story of granite and the remainder of press brick. The building will stand out by itself, having streets on two sides, the public levee on the third and the Great Kanawha River on the fourth. It will be finished with press brick on all four sides. The building will be up to the minute in all respects and will be unquestionably the handsomest office building in the State.

The building being erected by C. K. Payne for the Payne Shoe Co. is a six-story brick structure. It occupies a prominent corner of Virginia street, and is a handsome and attractive structure. The Wehrle building and the Lewis, Hubbard & Co. warehouse are both brick structures.

In addition to these business buildings, there has been constant activity in the building of residences, and in no former year of the city's existence were so many buildings of that kind erected as during the one just closed. But the one now entered upon bids fair to surpass it in the number and value of the homes to be erected, and by the time another winter closes in several hundred new dwelling-houses will grace various parts of the town. One firm of builders I wot of are only waiting for proper weather to begin the excavations for six dwelling-houses, while other contractors also have prospects for an equally busy season. These houses are not of the cheap tenement class, but are almost invariably brick structures, with hardwood finish, and intended for the dwelling places of their owners.

The reasons for this activity are found in the many valuable resources surrounding the city on all sides. Much of the standing timber left in the forests of the State is in territory tributary to Charleston; it is the undisputed metropolis of the Great Kanawha and New River coal fields; it lies midway between the fine oil fields of Roane and Lincoln counties; gas has been discovered on all sides of it in large quantities; it is the location of a number of big manufacturing plants, and the abiding place of many men with money enough and enterprise enough to keep it in the lead of the State's municipalities.

Just before the panic struck the country preparations were completed to make South Charleston, a new suburb just established by Crawford & Ashby, ex-Governor MacCorkle, the two Chiltons and a number of their Eastern friends and business associates, an ideal location for manufacturing plants of every profitable kind. The promoters had opened up a new gas field and were about to pipe its product to their new town when the United States

Natural Gas Co. made a contract with them to buy their gas and furnish what was needed at South Charleston at attractive manufacturers' prices; free sites were laid off and held in reserve for factories; financial aid was provided for, so that weak but worthy institutions might be given needed assistance; a railroad, street-car, wagon and foot bridge was begun, spanning the Great Kanawha and joining the city with its new suburb, and preparations were made to extend the traction line from the former to the latter. Two glass factories, one rolling mill, a chemical-engine factory and a number of smaller concerns were located, and dwelling-houses by the dozen sprang up, giving what three years ago was farming territory the appearance of a small city, and, despite the hard times that struck upon the country, South Charleston has prospered and progressed from the beginning. From now on it promises to outstrip the hopes of its promoters. The big combination bridge was completed months ago; the traction company is now running its cars from the heart of the city to the furthest part of the suburb, and there is not a busier place on the map nor one which possesses greater potentialities for the new year. A number of valuable manufacturing plants now located elsewhere have recently been making inquiry about South Charleston, committees of their stockholders have come to see what the advantages are, and there is every prospect of several excellent acquisitions being secured by the new town in the near future.

A new enterprise seemingly certain of being located here is a clay-working plant. A company was recently formed for this purpose, the principal stockholders being well-known business men of Louisville, Ky., and it is the intention to begin the construction of a plant at an early date. This plant will be located on Elk River, just outside the city limits to the north. At that place is a vein of clay that has been pronounced of the finest quality for the purpose for which the company was formed, and it is confidently expected that a great and lucrative enterprise will be founded there.

The Chamber of Commerce has now in hand a proposition from a large automobile concern to move its plant to this place. The concern is said to build a machine of high quality and great popularity, and the leading business men of the city regard this as an excellent opportunity to secure an enterprise of value. Announcement of the success of the plan is expected at any time now, as the requirements of the stockholders of the automobile company are small and will doubtless be easily met.

An enterprise of moment to the city, and which it now seems will be carried out during the present year, is the extension of the traction line to Kanawha Falls, some 35 miles up the river. There is a very large population lying between this place and "the Falls," and the building of the traction line would prove the means of bringing to the city a very much greater proportion of its trade than is now enjoyed. The promoters of the plan are W. E. Chilton, president of the traction company; Joseph E. Chilton; ex-Governor MacCorkle; F. M. Staunton, president of the Kanawha Banking & Trust Co., and Col. Fred Paul Grosscup, capitalist and promoter. These gentlemen are all full of enterprise and public spirit, and their getting behind a plan such as this means that it will be put through. The line will be extended also down the river some six miles to Dunbar, a new town promoted by Colonel Grosscup and George S. Couch, another leading citizen of Charleston. This latter ex-

tension will be particularly valuable, because it will bring about the opening up of many truck farms and the cheapening of the cost of living in this city. Trucking is an industry to which all too little attention is being given in this section, and most of the vegetables consumed here are shipped in from other States, while excellent trucking lands close about are left lying idle. Colonel Grosscup and Mr. Couch have subdivided a lot of rich land into small parcels fit for trucking and put them on the market at reasonable prices, and the extension of the traction line will mean their immediate utilization. No enterprise could be established that would prove of more far-reaching benefit to the public.

The Kanawha & West Virginia Railroad (the Blue Creek Line)—another Chilton and MacCorkle enterprise, by the way—is coming into its own, and not only promises to be a paying proposition for its builders, but also a fine feeder for the business of this city. This road is only about 50 miles long, running into a new coal field on Blue Creek, but it is now hauling 2000 tons of coal daily, and there is every prospect of a rapid increase in the output during the year. As the only outlet for the people on Blue Creek is through this city, it stands to reason that the upbuilding of that section must mean a valuable addition to Charleston's trade territory.

I was talking yesterday with a coal man who had just returned from New York, and he tells me that the Kanawha and New River operators will be getting a price for their output in the next few weeks that will make the business satisfactorily profitable. That is all that is needed to fill Charleston's cup of present prosperity to the brim. The market for coal has been good for the past few months, so far as amount was concerned, but not at all good as regards prices. Now that it is about to become satisfactory in that respect there seems nothing for this city to wish, except more people and more enterprises, and these the future will no doubt supply with satisfactory rapidity. **GEORGE BYRNE.**

\$240,000 in Churches.

James E. Clarke, editor of the *Cumberland Presbyterian*, Nashville, Tenn., has forwarded to the MANUFACTURERS' RECORD a list of churches now being built or to be erected in the State of Tennessee by the Presbyterian denomination. They represent an investment of \$240,000. The list includes edifices at Chattanooga, Apison, Sale Creek, Ocoee Tank, Culleoka, Howell, Chapel Hill, Farmington, Fayetteville, Lawrenceburg, Lewisburg, Monroe, Cookeville, Gordonsville, Huntingdon, McKenzie (2), Gleason, Savannah, Sharon, Bellbuckle, Haley, Cowan, Flat Creek, Winchester, Sparta, Christiana, Dickson, Alexandria, Nashville (3), Sylvia, Arlington, Dyer, Kenton, Ro-Ellen, Atoka and Kerrville. According to present plans an approximate amount of \$240,000 will be expended for erection of these buildings—one noted to cost \$840, others varying from \$1000 to \$30,000.

Hartsville.

So great was the demand for "News and Views of Hartsville," published not long ago by Thomas H. Coker, Jr., editor of the Hartsville (S. C.) *Messenger*, that its issue of 500 copies was soon exhausted and now a new edition has come from the press, presenting in attractive form the kind of facts the investor and homeseeker desires about the South Carolina town, which has grown in 20 years from 200 inhabitants to 3000 inhabitants.

SOUTHERN COMMERCIAL BODIES WANT INDUSTRIES

WHAT IS YOUR TOWN DOING?

The MANUFACTURERS' RECORD will be glad to receive from responsible correspondents in every town in the South brief items of news about business conditions and the opportunities for industrial enterprises. This information is desired for publication without cost of any kind to the sender, and regardless of whether the writer of the letter is a subscriber or not. The MANUFACTURERS' RECORD accepts no paid town write-ups. It seeks information of this kind from commercial and industrial organizations and from municipal authorities in every town and city of the South.

TO SELL DRAINAGE BONDS.

The Commercial Club,
Warrensburg, Mo., February 12.
Editor Manufacturers' Record:

We have some opportunity here for the investment of capital and for business opportunities as we see it. On February 21 there will be sold here \$190,000 worth of 6 per cent. drainage bonds, maturing in 20 years, secured by over 23,000 acres of good bottom land, worth from \$30 to \$100 per acre. On March 10 the contracts for the construction of the ditch will be let. This will include somewhere about 35 miles of ditch. So much for immediate investments.

The farmers here are in good financial condition, the farm lands having advanced from \$5 to \$7 and \$10 per acre in the last six months. Town property value increased from 5 to 10 per cent. in the same period.

A good location is here for a broom factory, with good land for raising of the corn, and a very fine variety of bituminous coal within five to seven miles from town and fairly easy of access. A brickkiln with a fair capacity is within 10 miles on the railroad. This is also the home of the famous Warrensburg blue sandstone quarries. There is easy access to either St. Louis or Kansas City, Mo., on the main line of railroad, possessing the best roadbed and fastest service between St. Louis and Kansas City.

We have one of the best public-school systems in the State and the third largest State normal school in the world.

Here is a good opening for a wide-awake poultry house. Over a million and a half dollars' worth of poultry was marketed in this community alone during the last year.

Address all communications regarding bonds and ditch contracts to R. J. Grover, deputy secretary Blackwater Drainage District No. 1, Warrensburg, Mo. All other communications or inquiries will be addressed to the undersigned.

W. E. SUDDAH,
Secretary.

HARDWOOD TIMBER NEAR.

Continental State Bank,
Big Sandy, Tex., February 9.
Editor Manufacturers' Record:

Our town and the surrounding territory affords an excellent opening for a manufacturing plant that can utilize some of the hardwood timber, of which we have an abundant supply accessible. It occurs to us that a plant that would work this timber into handles, felloes, spokes, certain articles of furniture, etc., could realize a very nice profit on the necessary investment. Our timber is largely hickory and the various varieties or species of oak.

Our town is well located from a standpoint of railroad facilities. It is the junction point of the Texas & Pacific and Cotton Belt systems. In addition to this desirable feature, we have an inexhaustible supply of water, which would be indispensable in the operation of a manufacturing plant.

Big Sandy has about 1200 inhabitants. It has 14 business establishments in the following lines: General merchandise, groceries and feed, dry goods, drug, banking, hardware and furniture. We have

no commercial club or business league at the present time, but expect to have one in the near future. We are just a good little town, with a substantial development.

We shall take pleasure in giving any desired information to anyone who may be interested.

W. L. PERDUE,
Cashier.

HICKORY DOING THINGS.

Chamber of Commerce,
Hickory, N. C., February 10.
Editor Manufacturers' Record:

Hickory, a city of about 8000 people, 1200 feet above the sea-level, on the Western North Carolina division of the Southern Railway, is going ahead with substantial growth, not boasting or booming, but doing things. It has recently reorganized its Chamber of Commerce on a substantial basis and is preparing to take care of visitors and investors.

The Southern Power Co., which is doing so much for the development of the South, has completed its line to this place, and puts Hickory even with the most favored in electric power. All the cotton mills will be operated by this power. The company will also develop considerable more power on the Catawba River, near this city.

The A. A. Shuford Cotton Mill is now under construction and will be completed for the new crop.

This would be a splendid place for a small cottonseed-oil mill, there being stock to consume by-products.

The Catawba County Live-Stock Association is doing much for the development of live-stock industries of this section, especially the dairying.

With the finest all-the-year climate, Hickory entertains many visitors summer and winter. There are none of the chilling blasts of the North and West and miasma of the lower sections.

Railroad facilities are good—two lines, Southern and Carolina and Northwestern, the latter giving an outlet to the Seaboard Air Line.

W. H. NICHOLSON,
President.

AROUND BIG STONE GAP.

Board of Trade.

Big Stone Gap, Va., February 4.
Editor Manufacturers' Record:

I should like to call the attention of the thinking investors through your paper to a little section of the South that has been increasing in value in the past decade.

What we want the world to know is we have an immense field for the hosiery mills, the pants and overall man, the glove maker, as well as the merchant, to get the business that is offered by the hundred of commissaries and small stores.

In 1880 thousands of acres of land surrounding this city were bought for \$1 per acre; 10 years later these same lands were held at \$100 per acre, and today they cannot be bought for \$400 per acre. As the worth of the coal deposits becomes known we will see these values multiplied again.

The owners of these lands are full well alive to the high coking qualities of their coal beds, and already around Big Stone Gap 4000 coke ovens give forth their daily yield to the iron world.

Only a short distance behind the coal

fields comes timber. The virgin forests that surround Big Stone Gap are being bought up by the investing world.

No wonder we feel rich here in this beautiful valley of ours, bounded on one side by coal and on the other by iron ore, and on all sides by timber.

Within the last three months the Board of Trade of Big Stone Gap has taken active steps in placing its advantages before the commercial world, and already their efforts have been rewarded in the location of a foundry and large machine shop.

A. H. COOLIDGE,
Secretary.

FOR A COTTON ROPE FACTORY.

Board of Trade,
Valdosta, Ga., February 8.
Editor Manufacturers' Record:

The Valdosta Board of Trade is desirous of getting into communication with some experienced man in manufacturing cotton rope with a view to establishing a factory in Valdosta. Local capital can be enlisted in such an enterprise. The whole product of such a plant would be taken by the wholesale houses of this city.

W. L. GLESSNER,
Secretary.

WANT A RAILROAD.

Commercial Club,
Seminole, Tex., February 5.
Editor Manufacturers' Record:

Gaines county, Texas, offers \$50,000, right of way through county and depot grounds in Seminole for first railroad through that county.

H. C. WHITFIELD,
Secretary.

Detailed information about towns seeking manufacturing enterprises and offering specific advantages for development and business opportunities can be found under the head of "Classified Opportunities" on pages 84 and 85, and under "Cities, Towns and Railroads Inviting Factories" on pages 123, 124 and 125.

Land Values Increase.

Wm. H. Donahue, cashier First National Bank, Seiling, Okla., writes to the MANUFACTURERS' RECORD:

"This country, western central Oklahoma, is barely five years old. The farmers are working into a fairly good financial condition from a bare homestead proposition five years since. They are more in debt, but have more credit, and this country operates on credit almost exclusively. Surplus bank deposits are small. The business and industrial outlook is good. All local money will be invested locally. There are some few farmers of this section in speculative class, but principally on Oklahoma City and other real estate that would not come under the 'wild-cat' head, properly speaking."

"Business and farm values have doubled and redoubled. Farm land has increased here in the last five years 150 per cent. This would give us an increase of 25 per cent. per year, which is about correct for the last 12 months' advance. This section is being settled and financed from other sections. The settlement for past five years will average 15 per cent. per year, and practically all business enterprises are being financed by outside capital or capital that has originated in other sections."

"Midwest Oklahoma is practically all inland, and is being settled by a substantial class of farmers and business men who are crowding out the shiftless early settler that follows up the pioneer settlement of Western homestead land and then moves on, failing to hold his own with the more progressive 'staying' element. The

soil is generally good and ordinarily productive, and is becoming well improved and well farmed. The crying need of the section is railroad facilities, but the immediate prominence that Oklahoma City is growing into as a cattle market and central State metropolis bids fair toward East-West railroads from that point to New Mexico and west, and to Denver, offering a promise to at least the upper Canadian River valleys."

Questions.

Mr. George E. Ladshaw of Ladshaw & Ladshaw, civil and hydraulic engineers, Spartanburg, S. C., writes to the MANUFACTURERS' RECORD as follows:

"Banking is good; very good. Stock sold here the 7th inst. for 20 per cent. more than book value.

"Mercantile business is normal. The farmers made good crops at good prices. Necessitates commutation only, not development.

"Development: Ban or bane? What is the matter?"

"A very successful person consulted me this week about an addition to his plant, resulting in the conclusion that there is no money available for development purposes.

"A very successful banker stated the same day that short credits ruled absolutely without guarantee of extension.

"I have several enterprises, one very large, affected as above stated. Plenty of property, but can make no reasonable terms for cash.

"Also we have the best water-power property in this section, ready for development and market assured.

"It is rumored here on excellent authority that a would-be octopus, lurking in this vicinity, has issued a ukase for the government of the wretched denizens, and a rescript to the unfortunate cities of Philadelphia, New York and Boston that no money shall be available for water-power development in this section.

"Ban or bane? Under which king, Bezonian? Speak or die."

Good Roads.

[Atlanta Constitution.]

The endurance contests projected and operated by the *Constitution* insured good roads in five important directions throughout Georgia.

They also gave an incalculable impulse to highway construction elsewhere. It is a demonstrable fact that counties throughout the State, far removed from the sense of these contests, felt the stimulus and busied themselves in systematic improvement.

The achievement of the year ending, moreover, is simply an earnest endeavor of what is to come during the year now approaching.

This is underwritten by the *Constitution's* announcement of other great good-roads contests of an intrastate nature, the details of which will disclose a plan to foster road-building on a gigantic scale.

The most inspiring and significant feature of the situation in Georgia is that the various counties are showing a decided disinclination toward conservative bond issues to promote road-building.

Ten years ago, if an adventurous spirit had suggested bonds to further good roads, he would have raised such a storm as to virtually smother his protestations.

Recently, however, we have progressed. Georgians are seeing that building roads through bond issues is simply buying good roads on the installment plan, letting posterity help pay for a benefit of which they will be the most direct inheritors.

GOOD ROADS

WEEK'S HIGHWAY RECORD.

Progress in Southern Road and Street Improvement.

[Full details of highway undertakings are given in the Construction Department.]

Bonds Voted.

Huntingdon, Tenn.—City has voted bonds for \$10,000 to improve streets, etc.

Bonds to Be Voted.

Ashboro, N. C.—Randolph county votes March 15 on issuing bonds for road improvements.

Burlington, N. C.—City votes May 3 on issuing bonds for \$50,000 to improve streets.

Easton, Md.—City contemplates issuing bonds for \$60,000 to asphalt main streets.

Kansas City, Mo.—City votes in April on issuing bonds for \$350,000 to provide west traffic way.

Key West, Fla.—City votes April 12 on issuing bonds for \$192,000 to improve streets, etc.

Norton, Va.—City votes March 10 on issuing bonds for \$35,000 to improve streets.

Obion, Tenn.—City will vote on issuing bonds for \$10,000 to improve streets.

Contracts Awarded.

Anadarko, Okla.—City awarded contract for 60,000 yards street paving.

Birmingham, Ala.—City awarded contract for 75,000 square yards of bitulithic paving.

Chattanooga, Tenn.—City awarded contract for constructing Rossville boulevard; cost of grading, \$19,650.

Denison, Tex.—City awarded contract for paving one block with vitrified brick.

Lexington, Ky.—City awarded contract for concrete sidewalks, curbing, guttering, etc.; over 100,000 square feet.

Little Rock, Ark.—City awarded contract for paving one block; concrete foundation and asphalt surface.

Mobile, Ala.—City awarded contract for cement pavement and walks.

Norman, Okla.—City awarded contract for rock asphalt paving.

Orange, Tex.—City votes April 5 on issuing bonds for \$15,000 for improving streets.

Contracts to Be Awarded.

Dothan, Ala.—City opens bids March 7 for constructing 18,500 square yards of pavement and 7000 linear feet of granite curbing.

Clarksville, Ga.—City will open bids March 4 for grading and constructing three miles of sidewalk; brick or concrete.

Dustin, Okla.—City opens bids Ferrary 21 for constructing sidewalks.

Jonesboro, Ark.—City will readvertise for paving bids; vitrified brick on gravel foundation.

Lynchburg, Va.—City opens bids February 22 for vitrified brick paving.

Middlesboro, Ky.—City will pave various streets, probably with vitrified brick.

Montgomery, Ala.—City opens bids March 7 for certain roadway and sidewalk paving.

Oklahoma City, Okla.—City opens bids March 7 for sheet asphalt paving aggregating 262,215 square yards; length, 15.78 miles; approximate cost, \$800,000.

Palatka, Fla.—Putaski county opens bids March 5 for constructing 28 miles of hard-surfaced roads.

Paragould, Ark.—City has had surveys made for paving to cost \$18,000.

Tampa, Fla.—Hillsboro county opens bids March 1 for hard-surfacing one-half mile of road.

Tampa, Fla.—City opens bids March 1 for hard-surfacing four and one-half miles of road; 12 feet wide.

Washington, D. C.—Washington-Alexandria Greater Highway Association will contract for road 3.6 miles long; 30 feet between ditches, with 20-foot roadway; macadam roadbed 11 inches thick; estimated cost \$54,000.

Leading for Good Roads.

W. T. Delery, civil engineer, of Houston, Tex., writes to the MANUFACTURERS' RECORD:

"Harris county, Texas, evidently intends to lead the way in the matter of good roads for the coast country of Texas. A half-million dollars, obtained from the sale of bonds, was placed at the disposal of our County Commissioners at their last meeting. This means that our system of gravel and shell roads, the pride of the county, will all be extended to the county lines in four directions—north, east, south and west—at once.

"On the south and west three of these roads will connect with roads of Galveston, Brazoria and Fort Bend counties, making continuous roads 50 miles in length. On the east it is expected that Liberty county will connect up the gap that will connect Jefferson and Harris counties, making 84 miles of continuous shell road. To the north Harris county will build to the county line, giving us two shell roads 25 miles in length each.

"In addition to this county work, private corporations are building hundreds of miles of dirt roads through their lands, connecting up these gravel roads.

"South of Houston, 10 miles, the following roads have been built since November 1 last: Fifty miles in Brazoria county by the Allison-Richey Company of Houston; 30 miles in Fort Bend county by the Magnolia Land Co. of Houston; 35 miles in Brazoria county by A. C. Swanson Company of Houston. The above-named parties have jointly let contracts for 60 miles of additional roads and 30 miles of drain ditches for the purpose of maintaining said roads and rendering the lands tillable for intense farming. No expense is being spared by these parties to put these lands in perfect condition for actual settlers.

"This movement is sure to be felt in Texas at an early date. A wholesale demand for building material, farming implements, etc., will reach the manufacturing centers this fall to build homes and equip farms for these new settlers."

Macadam Roads Near Durham.

[Special Cor. Manufacturers' Record.]

Durham, N. C., February 14.

At the last meeting of the County Commissioners four new miles of macadam were ordered, and work begins April 1. This will make 100 miles of completed macadam for Durham, and there will be something like 15 in process of making.

W. T. BOST.

Spring Hope to Raleigh.

The Montgomery Lumber Co. of Spring Hope, N. C., which now has a line in operation from there to Bunn, N. C., is reported to have announced its intention to build an extension to Raleigh, about 35 miles. It has been rumored for some time that the lumber road was destined to reach the State capital, because it was being constructed in a superior manner with the evident purpose of handling considerable traffic. The purpose of the company, according to a dispatch quoting the directors, is to build the Raleigh extension as rapidly as possible. G. I. Buell of Spring Hope is manager.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

DRUM POINT RAILROAD.

Bills in the Maryland Legislature to Incorporate New Companies for Building.

A bill has been introduced in each branch of the Maryland Legislature to incorporate the Washington, Marlboro & Drum Point Railway, Power & Light Co., to build an electric railway from Washington, D. C., to Drum Point, at the mouth of the Patuxent River, on the Chesapeake Bay. G. F. Owens of Washington, D. C., and others are interested, including C. A. M. Wells, Wm. C. Carroll, Chas. C. Mayer, Reese Carpenter, H. Magruder, F. C. Carpenter and E. A. Fuller.

Another pair of bills have also been introduced in the Legislature for the Washington & Tidewater Railroad Co. This proposes to build a line from the District of Columbia to some place on tidewater in St. Mary's county, Maryland. The incorporators of the line are Geo. Blackstone, G. M. Bolling, F. T. Homer, Jas. R. Duke and W. Bond Duke, all of Baltimore.

For 25 years the Baltimore & Drum Point Railroad Co. has had a charter to build a line from Baltimore to Drum Point, Md., the avowed object of the plan being to establish piers at Drum Point, thus saving 80 miles of water haul for freight, principally coal. The old company, however, has done practically nothing toward building this line, and the charter is about to expire; hence the activity in promoting new lines to fulfil at least some of the contemplated plans. Edw. Lauterbach of New York is the holder of the Drum Point charter.

There is another line in the Southern Maryland section, namely, the Washington, Potomac & Chesapeake, which has promised to be of some importance, but up to the present time its plans have been realized only in a comparatively small degree. This company has 21 miles of line from Brandywine, Md., a station on the Pennsylvania Railroad, to Mechanicsville, Md. Henry W. Watson of Philadelphia, Pa., is president, and there has been talk from time to time of building an extension to the shores of the Potomac River. If either of the proposed new lines were extended into St. Mary's county considerable development would doubtless result, as practically the entire county is without railroad facilities at present. The same statement can also apply to Calvert county, in which Drum Point is situated.

NEW ROAD TO THE GULF.

Albany & Northern Sold to a Company Which Will Build Extension.

The Albany & Northern Railroad, of which T. Edward Hambleton of Baltimore is president, has been sold to the Georgia, Southwestern & Gulf Railway Co., which, as recently reported, proposes to build a line from Albany via Colquitt and Donaldsonville, Ga., and Marianna, Fla., to St. Andrews Bay, Fla., on the Gulf of Mexico, a distance of 160 miles, with a branch to Dawson, Ga.

The Albany & Northern runs northeast from Albany 35 miles to Cordele, on the Seaboard Air Line, and may be extended in the same direction to Hawkinsville, about 30 miles, and thence northward about 40 miles to Macon, although the line immediately in view is the extension from Albany to St. Andrews Bay.

W. M. Legg of Macon, Ga., is president of the Georgia, Southwestern & Gulf, which, according to a late report, has financed its plan in Paris. H. J. Bruton of Donaldsonville, Ga., is secretary and

treasurer. It is said that survey for the extension to the Gulf will be made immediately. The chief engineer is T. H. Hazelrigg of Indianapolis, Ind.

New Equipment, Rails, Etc.

The Chicago, Rock Island & Pacific Railway, according to an official letter, has ordered 50 consolidation locomotives and 25 Pacific locomotives from the American Locomotive Co., New York. The railroad is also in the market for 71 passenger train cars, including coaches, baggage, postal, combination and dining cars, and also 2000 freight cars, including box, refrigerator, ballast and caboose cars. A press report says that the box cars are to be steel underframes, of 40 tons capacity, and they will number 825.

An officer of the Chesapeake & Ohio Railway writes that the company is not in the market for any additional equipment. This denies a recent press report.

The Lexington Railway Co., Lexington, Ky., according to an official letter, has ordered from the J. G. Brill Company, Philadelphia, four 30-foot single-truck semi-convertible city passenger cars.

Concerning the report from Pittsburgh that the Pennsylvania Railroad Co. had ordered 50 locomotives from the Baldwin Works, Philadelphia, an officer says that the company is now receiving for its Western lines some of the 50 locomotives ordered last year from Baldwin's. This is probably the contract to which the dispatch referred.

The Baltimore & Ohio Railroad directors at their meeting in New York, according to a dispatch, authorized the purchase of 120 consolidation locomotives weighing 227,000 pounds each, besides 30 Mallet compound locomotives. The company is now receiving deliveries on the large order for locomotives placed in the fall. The new Mallet engines will be very heavy, weighing 420,000 pounds each, and they are to be used on the mountain divisions.

The St. Louis, Brownsville & Mexico Railway Co. is quoted as confirming a report that it has placed an order for 50 Hart convertible cars of 40 tons capacity with the Rodger Ballast Car Co., to be delivered in June, and they will be constructed by the American Car & Foundry Co., St. Louis.

The Florida Railway Co., Live Oak, Fla., will, it is reported, be in the market for equipment.

The Fort Worth (Texas) Belt Railway is reported to have ordered from the American Locomotive Co. one six-wheel switcher.

The Virginian Railway, according to a press report from Norfolk, is getting prices on 20 locomotives, including 8 Mallet compounds, 11 Mikado type and 1 switcher. It is also in the market for 20 cabooses.

The Mississippi River & Bonne Terre Railroad is reported to have ordered two consolidation locomotives from the American Locomotive Co.

The Harriman lines, according to a market report, have placed orders since last July for a total of 500,000 tons of steel rails, most of which was awarded to the United States Steel Corporation.

The Western Maryland Railroad, it is reported, contemplates the purchase of several hundred freight cars.

The Groveton, Lufkin & Northern Railroad, according to a report, has ordered one 10-wheel locomotive from the American Locomotive Co.

The Washington (D. C.) Railway & Electric Co., according to a press report, has ordered 50 pay-as-you-enter cars from the J. G. Brill Company.

The San Antonio (Texas) Traction Co. has ordered six semi-convertible pay-as-you-enter cars, each 28 feet 10 inches long, from the American Car Co. of St. Louis.

The Indianapolis & Louisville Traction Co. of Louisville, Ky., is reported contemplating the purchase of new equipment.

The Wichita Falls (Texas) Railway says a report, has ordered four 34-foot motor cars and four 60-foot trail cars, all of the pay-as-you-enter type, from the American Car Co.

The Oklahoma Railway of Oklahoma City is reported to have ordered from the Niles (Ohio) Car & Manufacturing Co. six 45-foot steel cars, vestibuled.

The Citizens' Railway Co. of Waco, Tex., is reported to have ordered from the American Car Co. three single-end pay-as-you-enter cars.

Chicago, Memphis & Gulf.

According to reports from Memphis, the Chicago, Memphis & Gulf Railroad Co. of Dyersburg, Tenn., which is building a line from Cairo, Ill., via Memphis and Dyersburg to Jackson, Miss., will provide an outlet to the Gulf of Mexico east of the Mississippi River for the Hill system of railroads. At present construction is under way, according to quoted official utterances, between Tiptonville, Tenn., and Hickman, Ky., and bonds have been placed upon the market to fulfil the comprehensive plans of the promoters. John H. Watkins of New York, formerly of Memphis, is prominently concerned in the enterprise, the president of which is S. Grainger Latta of Dyersburg, Tenn. The line will be 325 miles long when completed from Cairo to Jackson. At the latter point connection will be made with the New Orleans Great Northern, the lumber railroad built recently by the Goodyears of Buffalo.

It is also surmised that the Frisco system will use the new route to reach New Orleans from Memphis. A press report from the latter city says that the new road has bought land for terminals adjoining the Frisco, and that the two will use joint freight sheds. Contracts for the upper end of the new road are expected to be let about June 1. President Latta is reported as saying that he has arranged with the Frisco for the use of terminals at Memphis.

With reference to the expectation that the Hill roads (principally the Burlington system) will use the new line, it may be remarked that the latter is now building an extension from Herrin, Ill., to the Ohio River, which could easily connect with Cairo.

Gainesville Midland Extension.

The Gainesville Midland Railroad Co., which has a line from Gainesville to Athens, Ga., 42 miles, with a branch from Belmont (10 miles out of Gainesville) to Monroe, 32 miles, proposes to build an extension, according to a report, from Gainesville through the Nacoochee Valley to Robertstown, Ga. It is further reported that the extension may be continued into North Carolina, and that ultimately it will effect a junction with the Knoxville, Sevierville & Eastern Railway, which has been built from Knoxville to Sevierville, Tenn., and which proposes to extend into the Old North State.

It would be possible to connect these two railroads and also link them up with the Tennessee Central, which is now an independent proposition, for an important through line, although it does not yet appear that there is any determination to do so, although it is rumored that such plans are contemplated.

George J. Baldwin of Savannah, Ga., is president of the Gainesville Midland, and, it is said, desires to make the northward extension.

Americus to Waycross and the Sea.

A dispatch from Waycross, Ga., says that a conference has been called under

the auspices of the Ashburn Board of Trade to meet at Ashburn, Ga., on March 1 for the purpose of considering plans about the projected railroad from Americus, Ga., to a point on the Atlantic seacoast, perhaps Brunswick, Ga. Delegations will be present from Waycross, Ocilla, Irwinville and probably other points.

It is contemplated by the projectors of the line to utilize some lumber roads which run in the right direction to form parts of the through line desired, and it is likely that the road will run from Americus to Waycross, and thence to the sea. It is said to be certain that a road will be constructed from Ashburn to Irwinville, where connection will be made with a line from the latter point to Ocilla, this being already in operation. The entire route from Americus to the ocean would be about 175 miles long.

George W. Deen, John T. Myers, W. W. Lambdin and others of Waycross are reported prominently interested.

Wichita Falls Route Expanding.

J. A. Kemp, president of the Wichita Falls Railway, Wichita Falls, Tex., is quoted in a press report as saying that it is true that the Altus, Roswell & El Paso Railway has been purchased from Ed. Kennedy of Altus, Okla., and others. This company was started to build a line from Altus, Okla., to Roswell, N. M., and thence to El Paso, and it was also contemplated to build or make some connection westward toward the Pacific. About 100 miles of grade were built out of Altus, and it is said the Wichita Falls & Northwestern, which is one of Mr. Kemp's roads, has already bought rails and will lay the track from Altus to Hollis, Okla., immediately. Thence it will probably be extended to Wellington, Tex., and on to Roswell.

The Wichita Falls & Northwestern, as heretofore reported, contemplates building an extension into Lawton, Okla., making a branch from Devol, Okla., near the Red River. The company is also progressing with construction on the main line from Mangum to Elk City, Okla.

A Line from Texas to Colorado.

W. R. Evans, vice-president of the Denver & Gulf Railroad Co., Texhoma, Okla., writes that it has been chartered in Texas and will build 170 miles of line this year from Texhoma northwest into Colorado. The route lies through plains which are level, excepting at the river crossings. The road also has charters in Oklahoma and Colorado. The exact route has not been definitely settled. It is desired to obtain prices on railroad ties.

A press dispatch says that this road will connect with the Union Pacific Railway at a point near Limon, Col., but it is also proposed to build in the other direction from Texhoma to Dallas, Tex. Chicago capitalists represented by Franklin A. Umsted, who is president of the road at Texhoma, Okla., are said to be interested. The other officers are: Secretary and treasurer, H. C. Umsted; chief engineer, James Hicks.

Contractors' Award by Court.

A dispatch from Norfolk, Va., says that Judge Waddill of the United States Court, in charge of the Norfolk & Southern Railway receivership litigation, has entered a decree approving an arbitration award of \$178,789.17 to J. G. White & Co. of New York for construction work. Of this amount the decree provides for deductions of \$9630.61 to the Jarratt Construction Co.; \$31,953.77 to Johnson & Grommet Bros., and \$4000 in settlement of asserted claims which White & Co. and the Norfolk & Southern are jointly liable. The award of \$31,953.77 is to be held until a court of competent jurisdiction shall pass upon the respective claims thereto of Johnson & Grommet, Kline & Co. and C. F. Sapp, all of South Carolina. All awards carry interest.

Rogers to Huntsville.

An officer of the Arkansas, Oklahoma & Western Railroad Co., Rogers, Ark., writes that it will build 35 miles of extension from Rogers, Ark., to Huntsville, Ark. Twenty-one wooden bridges will be required and one steel bridge, the latter over the White River. The W. R. Felker Construction Co. is the contractor. It is in the market for some 12-yard air-dump cars and some drilling machinery. W. R. Felker is president of the line and Geo. D. Locke vice-president and general manager. The chief engineer is M. Hays.

A press dispatch says that ground has been broken for the extension, which will ultimately be extended to Bald Knob, connecting with the Missouri Pacific Railway. This will make an extension of 172 miles. The road has been running from Rogers to Siloam Springs, Ark., 30 miles, for several years, and has a branch of seven miles from Colville to Monte Ne.

New Orleans to Grand Isle.

Peter Lawton of New Orleans, who is reported interested with Theodore Wilkinson, H. C. Warmoth, J. J. Manson, E. F. Dyer and others in a plan to build an electric railway south of that city, is quoted as saying that the object is to begin construction from Morgan and Patterson streets in Algiers, which is on the opposite side of the river from New Orleans, and to build a line from that point to the Bellchase plantation, a distance of about 18 miles, but the final purpose of the line is to reach Grand Isle, on the Gulf coast of Louisiana, which will require a road about 55 miles long. It is proposed to operate the railway with gasoline motor cars. All of those interested in the proposition hold property along the contemplated route. They are now waiting to secure a franchise in Algiers for the purpose of entering that city.

Gainesville Railway and Power.

A report from Gainesville, Ga., says that H. H. Dean has been appointed receiver for the North Georgia Railway & Electric Co. and that the property is to be sold on the first Tuesday in May.

The company was chartered several years ago to develop water-power on the Chattahoochee River. Of these the Dunlap water-power has been completed, but steps are being taken to develop six other water-power plants, including the Wilson plant, on the same river, and a steel-tower transmission line 53 miles long to Atlanta. The company controls the Gainesville Electric Railway, which has eight miles of track, and is operated from a water-power plant on the Chestatee River between Gainesville and Dahlonega. Mr. Dean, the receiver, is one of the directors.

San Antonio, Tex., to Tampico, Mex.

An official letter confirms the report that the San Antonio, Rio Grande & Tampico Railroad Co. proposes to build a line 600 miles long from San Antonio, Tex., to Tampico, Mex. The Harrison Engineering Co. of New York has the contract. Geo. W. Nock of New York is chairman of the board of directors of the railway company, and is also second vice-president and chief engineer. J. F. Edwards of St. Louis is president; H. M. Aubrey and W. A. Cullen of San Antonio are, respectively, first and third vice-presidents; J. H. Haile is treasurer, and H. C. King, Jr., secretary. Others interested as directors are A. B. Hadden and B. S. Harrison, both of New York; A. L. Matlock and H. Hyman of San Antonio, Tex. Details as to the route are not yet arranged.

LUMBER.

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

Two Sawmills for Memphis.

A report from Memphis states that active preparations have begun for the erection of two sawmills at New South Memphis, to cost approximately \$75,000. One of the plants will be erected by the Moffett, Bowman & Rush Lumber Co., and will utilize an area of five acres of ground. The main buildings will be of fireproof construction and equipped with modern machinery. It is the purpose of the company to have the plant ready for operation within 90 days.

The other plant will be erected by the May Brothers Lumber Co. It will also utilize a space of five acres and will be constructed and equipped on similar plans as the Moffett, Bowman & Rush Lumber Co.'s plant. Both mills will have a daily capacity of 40,000 feet of lumber.

Big Timber Purchase.

The MANUFACTURERS' RECORD has authentic information regarding the purchase of 15,000,000 acres of timber lands in North Carolina by the Norwood Lumber Co., involving an expenditure of \$225,000. The property is located on the Murphy branch of the Southern Railway, in Swain county, and comprises the entire watershed of Forney Creek. It is the purpose of the company to move one of its band mills, which has been in operation in West Virginia, to the property, and begin cutting the timber as soon as possible. Louis Carr, president of the company, will have charge of the erection of the plant, and he may be addressed at Forney, N. C.

Buy Sawmill and Timber Lands.

A report from Pensacola states that W. B. Runyan and C. R. Burgoyne have purchased the large sawmill, timber holdings and equipment of the Manistee Mill Co. at Manistee, Ala. The transfer includes sawmill equipped with modern machinery, timber lands, three drykilns of 30,000 to 40,000 feet capacity, planing mill, the Manistee & Repton Railroad (extending from Manistee Junction to Manistee), rolling stock, etc. It is understood that the purchasers will incorporate the Runyan & Burgoyne Lumber Co. to develop the timber.

Alabama-West Florida Lumbermen.

The regular monthly meeting of the Alabama-West Florida Lumber Manufacturers' Association was held at Montgomery last week, with Secretary J. H. Eddy presiding. It was decided to make arrangements for a permanent exhibit of yellow-pine finishings in the Chamber of Commerce Building at Birmingham. The annual meeting of the association for the purpose of electing officers will be held at Montgomery on March 9.

Kentucky Retail Lumber Dealers.

At the annual meeting of the Kentucky Retail Lumber Dealers' Association at Louisville last week a resolution was adopted providing for the incorporation of the association. The following officers were elected: President, John F. Frey, Louisville; vice-president, Brown Y. Willis, Nicholasville; treasurer, Thomas R. Brown, Louisville; secretary, J. Crow Taylor, Louisville.

To Erect Large Stave Plant.

It is reported that the Welch Stave & Heading Co. of Monterey, Tenn., contemplates the erection of a stave and heading plant at Jellico, Tenn. It is the purpose of the company, it is said, to erect one of the largest plants of its kind in the South.

and arrangements are in progress for constructing a railroad from the Coster division of the Southern Railway to the yards of the plant.

Building Materials Needed.

Joe Schad, Wilmington, N. C., wants 100,000 feet of half-inch ceiling, 40,000 feet of seven-eighths-inch flooring, 300 doors, one and one-half inches thick, and 140,000 No. 1 shingles.

Lumber Notes.

The Kirby Lumber Co. of Houston, Tex., has resumed operations at its Reliance mill at Beaumont, with W. A. Martin in charge.

It is announced that the William Cameron Lumber Co. of Waco, Tex., has closed a contract with the Texas Central Railroad Co. to furnish it with 200,000 crossties.

The Builders' Exchange of Memphis has elected the following officers for the ensuing year: L. T. Lindsey, president; W. T. Hudson, first vice-president; C. W. Metcalf, second vice-president; R. E. Montgomery, treasurer.

The Manhattan Tie & Timber Co. of Cherryville, N. C., has incorporated with a capital stock of \$100,000. Its incorporators include D. P. Delling, Cherryville; W. H. Felder, Blacksville, S. C., and D. I. R. Felder of Denmark, S. C.

FOREIGN NEEDS.

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS' RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

Barrel and Furniture Machinery.

Spencer & Waters, Santiago, Chile, writes the MANUFACTURERS' RECORD:

"We have two applications for barrel machinery, and we have seen a catalogue of P. Janetel of 41 Cours de Vincennes, Paris, in the hands of one of our customers, but he will wait until we can get prices from the United States; they are for wine barrels; machinery for working and making cane furniture. We have been also asked for information of this kind of machinery, and if you have any means of communicating with these makers, would ask that they send us as full details as possible, and, where prices are quoted, to inform us in letter apart of the discounts for export trade, impressing on them that unless they do so it is useless to lose time sending simply catalogues with prices only, as in order to close business we must be fully prepared. Please ask them to send us at least a duplicate set of catalogues."

"We have had another person to see us who wants the barrel machine shown in the catalogue issued by Anciens Etablissements Arbez, 41 Cours de Vincennes, Paris; P. Jamelet, Tonnererie Macauque. Our customer says he saw in Buenos Ayres an American machine for this same work that was superior, but he does not know the maker's name. Now, if you can get us in contact with makers of this, as well as similar machines for this work, we can likely place several orders."

For American Products.

Efisio Aschei, Milan, Italy, writes the MANUFACTURERS' RECORD:

"In May, 1905, you kindly offered to me your help in order to represent American firms. My business was then only of drugs and chemicals, with which Ameri-

cans cannot compete with European markets. But at present I am in a position to avail myself of your offer, as I can represent any machinery or other American article. For this purpose I can give the highest references and securities."

Machinery for Irrigation.

The Herradura Fruit and Vegetable Growers' Association, E. W. Halstead, secretary, Province Pinar Del Rio, Herradura, Cuba, writes the MANUFACTURERS' RECORD:

"In the interest of our colony I would like full information covering machinery for bringing water from lagoon, river, shallow or deep wells, for irrigation purposes, covering all points, with catalogues, erecting plans, prices f. o. b. Hanava, Cuba. Give guaranteed capacity and all matters necessary for a thorough understanding of what they have and what they can do."

Hand Power Well Borer.

Martin Lopez & Co., San German, Porto Rico, write the MANUFACTURERS' RECORD:

"I am interested in purchasing a complete outfit for boring wells by hand (not by power), and wish you would be kind enough to put me in touch with people who can furnish a description, illustrations and low price on the same. I have over a hundred catalogues describing, pricing and illustrating power well-drilling machines, but this is not what I want."

Belting, Typewriter Ribbons, Etc.

Nicolas Georgiades, Constantinople, Turkey, writes the MANUFACTURERS' RECORD:

"Send me the addresses of makers of belting for machinery, both leather and cotton (balata) canvas for sails, chemical or carbon paper and ribbon for typewriters."

Men's and Boys' Clothing.

Martin Lopez & Co., P. O. Box 148, San German, Porto Rico, write the MANUFACTURERS' RECORD:

"We are very much interested in obtaining a list of the leading American manufacturers and jobbers of men's and boys' ready-made clothing."

Big Plant Completed.

Current reports state that the Continental Guano Co. of Wilson, N. C., has completed its extensive fertilizer plant at Wilson and has put it in operation. The plant will be driven by electricity, and is equipped for an annual capacity of 200,000 tons of acid phosphate and 100,000 tons of ammoniated fertilizer. The main building is one story high, 150x250 feet, while there is a four-story building, 50x150 feet, together with three other buildings. The equipment consists of two 40,000-gallon acid steel tanks, three leather-lined acid-measuring tanks, an acid egg-phosphate grinding machine, acid-phosphate mixing machine, electric dump cars, two complete fertilizer-mixing machines, air compressor and receiver, hydraulic pump, four 50-horse-power motors, fire system with 20,000-gallon concrete reservoir; one steel tank of 25,000 gallons capacity on a 115-foot steel tower and supplied by an artesian well.

The Flint Mill Increase.

The Flint Manufacturing Co.'s recently noted increase of capital was to pay for improvements completed lately. These included the installation of 2000 spindles and the erection of eight operatives' cottages at a cost of \$30,000. The mill is at Gastonia, N. C.

TEXTILES.**The Inverness Mills Co.**

The Inverness Mills Co. of Winston-Salem, N. C., has engaged C. R. Makepeace & Co., Providence, R. I., as architect for proposed plant. It will expend \$25,000 for erecting a two-story 75x300-foot building with first floor concrete base, and \$165,000 for installing 8000 spindles, 200 looms, probably superheated steam-power equipment, etc. The machinery contracts have been awarded, and the buildings will be contracted for about March 15. This plant is expected to be completed by April 30, producing the highest grade of wide print cloth. The Inverness Mills Co. was among the new enterprises reported organized since January 1. It has a capital stock of \$200,000, and Lawrence McRae is treasurer.

The Douglasville Knitting Mill.

The Douglasville (Ga.) Knitting Mill, previously reported organized, etc., has arranged all contracts. It is expending \$500 to remodel building, and is installing steam-power equipment for 25 horsepower, 10 knitting machines, etc., and the machinery will be increased until a daily output of 250 dozen pairs of hose is reached. Acme Knitting Machine & Needle Co., Franklin, N. H., has contract for knitters; John W. Hepworth & Co., Philadelphia, for loopers; Wildman Manufacturing Co., Morristown, Pa., for ribbers. The Douglasville Company is capitalized at \$15,000.

The Skyland Hosiery Co.

The Skyland Hosiery Co. of Flat Rock, N. C., will erect a building to replace its burned structure as reported last week. This will be of brick and, with equipment, will cost \$15,000. Its daily capacity will be 1500 dozen pairs of whole and half hose, and the contract for finishing and dyeing equipment has been awarded to the Philadelphia Drying Machinery Co. of Philadelphia, Pa. The Skyland management is also installing 80 new additional hosiery machines; main offices at Tryon, N. C.

Will Double Capacity.

The Whitehead Hosiery Mills of Burlington, N. C., will build an addition and install machinery to double capacity. This company is now operating 50 knitting machines, etc., by gas power, and is understood to have awarded contracts for the additions.

The Jennings Cotton Mills.

The Jennings Cotton Mills of Lumberton, N. C., will soon organize and arrange details of proposed plant. This company was reported incorporated in December with a capital stock of \$500,000 by H. B. Jennings and others.

The T. F. Lloyd Manufacturing Co.

The T. F. Lloyd Manufacturing Co. of Chapel Hill, N. C., has been incorporated with a capital stock of \$200,000 by T. F. Lloyd, Isaac W. Pritchard, W. S. Robinson and L. O. Lloyd.

Contemplates Installing Looms.

The Wadesboro (N. C.) Cotton Mills Co. plans the installation of looms to weave the product of its 1089 ring spindles.

Textile Notes.

A. C. Hutchison of Charlotte, N. C., is interested in a plan to build a cotton mill at Newells, N. C. The electrical drive is contemplated.

The Chamber of Commerce of Washington, N. C., is negotiating with Philadelphia manufacturers relative to establishing a knit-goods mill.

MECHANICAL

The Quick Unloading Car Chute.

Contractors and team owners who are ready to investigate improved devices for their use are invited to note the two accompanying views of the equipment manufactured by the Quick Unloading Car Chute Co. of Birmingham, Ala. Describing the equipment, the company says:

"For contractors' use as an accessory in the saving of time to dumping wagons for unloading we now offer a device for loading wagons from cars. It is a simple device, the nature of which will be at once comprehended from the illustrations. These show one chute discharging and a wagon loaded ready to be hauled away. The advantages that come from the use of this chute are that it saves the team under such circumstances is accomplished in



THE QUICK UNLOADING CAR CHUTE.

from waiting while the shoveler in the car do their work, and it enables them to work continuously instead of waiting for the arrival of a team. There being no waiting for the wagons or wagons waiting for loads, we claim—and it would seem quite conservatively—that by use of the chutes one-third more work can be done with a given number of teams.

The chute is made of sheet steel and angle iron, and is hooked to the top of the car with two large hooks, which may be attached to the bottom frame of the chute at three different points, according to the size of wagons to be loaded. Depending on the relative heights of the car sides and the wagons, the chutes are adjusted with a chain, by the hooking up of which the front of the chute is raised, while by letting it down the chute is given a greater inclination. It is necessary to

about three minutes after reaching the car.

"The chutes are adapted to handle any kind of material that can be shoveled, such as road-making material, sand, coal, coke, ore, crushed stone, gravel, cinders, ashes, slag, earth, hard brick, etc. The driver of the team adjusts the bolt, which locks the door and discharges the load from the chute into the wagon, then leaves the door relocked again, ready for the chute to be reloaded."

SCHERZER LIFT BRIDGE

Across the Altamaha River on the Georgia & Florida Railroad.

The construction of the Douglas, Augusta and Gulf division of the Georgia & Florida Railroad necessitated the crossing of the Altamaha River between Hazlehurst



THE QUICK UNLOADING CAR CHUTE.

fit the hooks securely to the top edge of the car, and not let the ends rest on the contents of the car. If the car is full of material, a space should be cleared for the ends of the hooks. The curved part of each hook must be in close contact with the edge of the car. If these precautions are taken, the chute will sustain double the rated capacity easily.

"The chutes can be used on box cars as well as on gondolas. If there is a grain door the hook is applied to the top and the braces are worked against the sill of the car. If there is no grain door, a 2x6-inch beam may be put across the inside of the door. The man in the car can always see the chute, so that he may shovel more rapidly than where he has to be careful to throw the material into a wagon that is not always where he can see it. By using two chutes on a car and dividing the distance the shoveler can unload the car without moving the chute

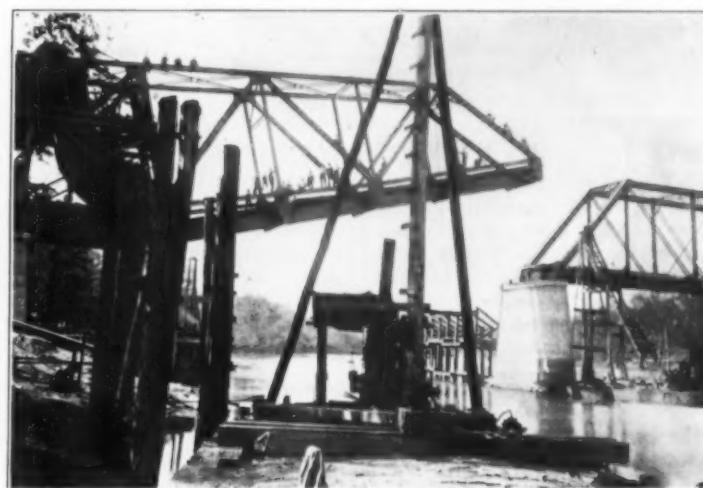
and Vidalia, Ga., or seven and one-half miles north of Hazlehurst. It was determined to adopt a Scherzer rolling-lift bridge for the draw span. The distance center to center of piers for the two through truss fixed spans is 152 feet 8 inches, and for the half through plate girder span is 100 feet, the bascule piers being spaced 103 feet 6 inches centers and the track girder piers 35 feet centers. The piers are of Portland cement concrete, the end piers being carried on piles, which are cut off and imbedded in the footings of the piers. The other piers, except the pier supporting the front end of the bascule span, which is carried to rock on timber cribbing, rest on timber grillage supported by piles down to rock. All of the piers have a batter of 1 to 12, and are capped with an 18-inch coping projecting 6 inches over the top faces of the piers. The superstructure carries a single line of railway track. The draw span is a single

leaf through Scherzer rolling-lift bridge having a length of 102 feet center to center of end bearings and a width of 15 feet 8 inches center to center of trusses. The trusses have four panels of 24 feet 9 1/2 inches each, giving a total length from center to center of end floor beams of 99 feet 2 inches.

At the rear end of each truss and in the same plane are two segmental girders upon which the bridge rolls during operation. These segmental girders and the track girders supporting them have

motion of the pinions during operation is horizontal and parallel with the top surfaces of the track girders, the operator having a walk provided alongside of the track supports, which are independent of the moving leaf.

The clear channel for the passage of vessels between protection fenders at right angles to the center line of the navigable channel is 85 feet 8 inches. While the navigation at this point on the Altamaha River is not heavy at this time, the pres-



SCHERZER BRIDGE OVER THE ALTAMAHIA.

surfaced steel plates on their contact surfaces to provide perfect bearing. The plates on the track girders have projecting teeth, which engage in recesses in the plates on the segmental girders to maintain perfect alignment of the moving leaf in all positions. The movable span forms a very simple and very rigid structure. It is counterbalanced by concrete counterweight placed in a box above and in the rear of the segmental girders, adding to the rigidity of the bracing. The counterweight is proportioned to keep the bridge

ent movement in the improvement and development of inland waterways is expected to bring a large increase in the number of vessels passing through the draw in the near future, and consideration was given to this increase in navigation along the river when the width of the draw opening was determined upon.

The entire work was in charge of Mr. G. B. Hazlehurst, M. Am. Soc. C. E., chief engineer of the railroad company, Mr. Hazlehurst designing the substructure and approaches. The Scherzer Rolling-Lift Bridge



GENERAL VIEW OF BRIDGE ERECTION.

in perfect balance in all positions so as to require a minimum power for operation. The operating mechanism is very simple and effective, and the power required so small that one man can operate the bridge easily under ordinary conditions and two men at fast speed. The power for operation is applied through hand cranks, which drive pinions engaging in fixed racks placed outside of each truss. These pinions are at the central point of the circle of the segmental girder. The

Co. of Chicago, Mr. Albert H. Scherzer, president and chief engineer, furnished the designs, plans and specifications for the bascule span and maintained a general consulting engineering supervision over the construction and erection of this portion of the bridge. The superstructure was fabricated by the Ambridge plant of the American Bridge Co., and erected by the erection department of that company. The bridge was completed and ready for service in September of last year.

Big Shipment of Belting.

An accompanying view represents a partial shipment of seventy-odd rolls of Diamond Titan stitched and other belt—more than a carload—made to one of the largest mill-supply houses in the South, agents for the Diamond Rubber Co. of Akron, O.

With this shipment there also went a large stock of standard grades of steam,



BIG SHIPMENT OF DIAMOND BELTING.

water, fire and suction hose, packing and valves, all for Southern lumber mills.

That the South is doing a big business—and each succeeding year a bigger business—is now conceded. The shipment mentioned is merely one bit of evidence added to the grand total. The Diamond Rubber Co. states it anticipates making even greater shipments to the South in the near future.

The Leadite Gasoline Furnace.

An accompanying illustration represents a furnace specially adapted for melting

"It is light and compact, which permits of it being easily moved as work progresses.

"The tank, or reservoir, is made of 24-ounce copper, and is thoroughly inspected and tested by experienced workmen.

"All parts are made durable and interchangeable.

"This melting apparatus will soon pay for itself by the saving effected in labor and fuel over the old-style coal, coke or

wood fire. You can start it when you want to use it and turn off the fire when it is not needed.

"This is also an excellent furnace for melting lead."

The Leadite Company of 1232 Land Title Building, Philadelphia, is the builder of this furnace.

Modern Mississippi Lumber Plant.

During 1909 the J. J. Newman Lumber Co. constructed an absolutely fireproof plant of steel and concrete throughout at Hattiesburg, Miss., to replace its former

room and a great deal of light for operation. In the construction of the plant 1000 tons of structural steel was used, this being furnished and erected by the Warden-Allen Company, Milwaukee, Wis. The machinery equipment was built and installed by the Filer & Stowell Company, Milwaukee, Wis. The sawmill floor contains two nine-foot band mills with 16-inch saws running at a speed of 9800 revolutions per minute, and one six-foot wheel horizontal resaw with a speed of 7200 revolutions per minute. Both carriages are equipped with shotgun feed, on the long side sawing timber 60 feet and on the short side 36 feet long. Two 72-inch six-saw edgers and 26-foot trimmer give ample equipment to handle the product. In front of the trim saws on the sorting chains leading to the drykilns there is a dipping arrangement, whereby all lumber is immersed in a preparation of bicarbonate of soda, which makes the air-dried lumber dry out clearly and brightly. For stacking the lumber for the drykilns there are three Fullerton automatic edge stackers. The drykilns consists of nine compartments, with a combined capacity of 160,000 feet per day. The log unloading dock is 420 feet long, with a pond capacity of 2,000,000 feet.

The planing mill consists of 12 machines, including two molders. There has just been installed one fast-feed matcher with a capacity of 175 feet a minute, made by Hall & Brown Woodworking Machinery Co., St. Louis, Mo. It is the intention of the company to eventually equip the entire planing mill with these fast-feeding machines. The capacity of this mill is 3,000,000 feet per month, while the rough sheds, finish sheds and yard have a capacity of 15,000,000 feet. In connection with the new plant is a lath mill having a capacity of 35,000 laths per day, these being made out of slabs and other waste materials, which are handled direct on conveyor chains from sawmill to the lath mill.

There was also built and put in operation in September last a modern box-shook factory, so as to utilize the waste, which eliminates almost entirely the burner proposition in the yellow-pine industry. The only material now going to the burner consists of bark and edgings, which cannot be used for laths, box shooks or moldings. The box factory is equipped with 20 machines, and has a capacity of 20,000 feet board measure per day. This branch of the plant is kept very busy shipping box shooks to the North, where they are used for crating canned goods, furniture and merchandise.

The water system and fire appliances were furnished by the General Fire Extinguisher Co. of Providence, R. I., through its New Orleans agency. This system consists of three miles of cast-iron mains with a maximum pressure of 200 pounds to the square inch, and gives ample protection to the entire plant in case of fire, a sufficient water supply being furnished by Leaf River, which is within 200 feet of the mill.

Power for all purposes is supplied by 12 boilers made by the Casey-Hedges Co., Chattanooga, Tenn., these having a capacity of 1500 horse-power, with self-feeding Dutch ovens, fuel being obtained from offal and sawdust from the sawmill and shavings from the planer. One 36x48-inch 800-horse-power Corliss engine is installed, also one 220-volt 600-kilowatt Allis-Chalmers direct-connected electric generator.

At Sunrall, Miss., which is 19 miles west of Hattiesburg, on the Mississippi Central Railroad, the company has two additional mills. One of these, built in 1902, has a capacity of 110,000 feet per day. This is equipped with eight-foot band mill, and can saw timber 70 feet long, and is used for heavy material ex-

clusively. Connected with this plant are four kilns with a capacity of 75,000 feet daily. A planing department is also operated in connection with the plant, and is equipped with five matchers made by the Hall & Brown Woodworking Machine Co., St. Louis, Mo. This plant has two rough sheds with a total capacity of 3,000,000 feet, which, together with the yard capacity of 5,000,000 feet, makes the aggregate capacity of the plant 8,000,000 feet.

The other plant at this point was built in 1904, and has a capacity of 340,000 feet per day, and was equipped throughout by the Filer & Stowell Company, Milwaukee, Wis. The planing mill operated in connection with this plant is equipped with 17 modern machines, all having individual motor drive. This mill has a capacity of 4,000,000 feet per month, and the rough and finish sheds a capacity of 5,000,000 feet. The same pond serves both of these mills, and has a capacity of 3,000,000 feet.

The equipment of the J. J. Newman Lumber Co. consists of six 45-ton and five 60-ton Lima locomotives made by the Lima Locomotive & Machine Co. of Lima, O., and one 65-ton Standard locomotive made by the Baldwin Locomotive Works of Philadelphia, Pa.; nine portable log loaders, 350 logging cars, standard gauge, and 45 miles of first-class logging railroad of 45 and 60-pound rails. Machine shops are established at both Sunrall and Hattiesburg, Miss., for the maintenance of this equipment.

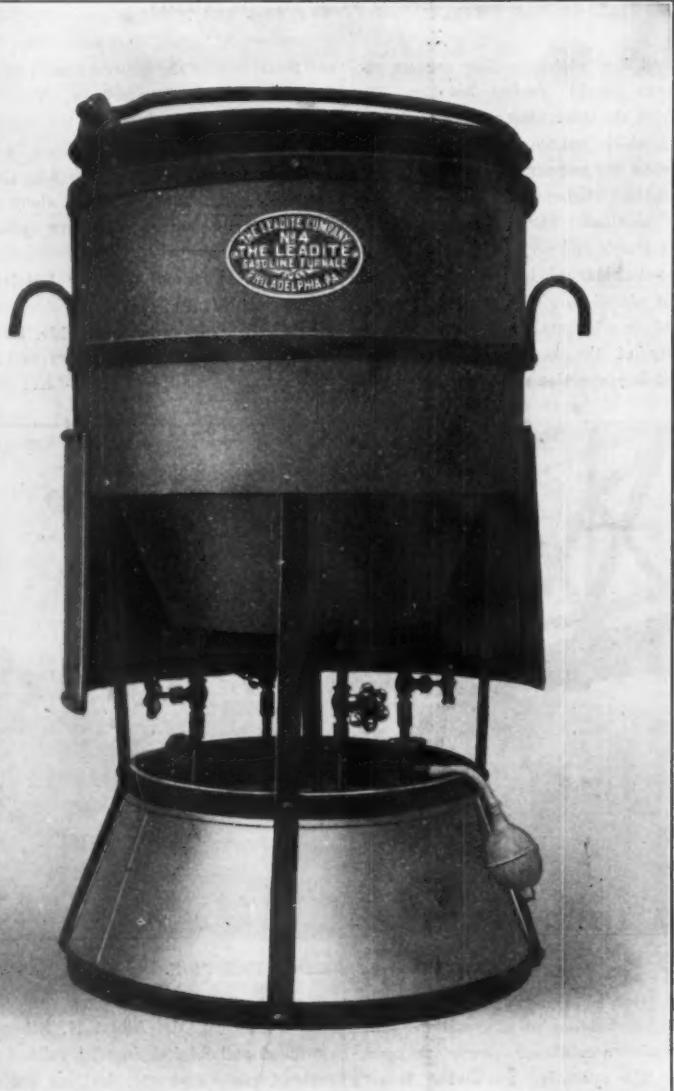
The company owns about 300,000 acres of fine long-leaf yellow-pine timber, situated within a radius of 25 miles of the mills. The logging railroad extends throughout this area and connects with the main line of the Mississippi Central Railroad. Mr. F. L. Peck, president of the J. J. Newman Lumber Co., is also president of the Mississippi Central Railroad. When he became interested in this territory he quickly saw the necessity for a railroad such as has been built in order to get the product of the mills to the Mississippi River. This railroad is 164 miles long, and extends from a point 14 miles south of Hattiesburg to Natchez, and at various points along this line connections are made with the leading railroad systems. This railroad also serves the purpose of opening up for settlement the vacant and cut-over lands in this part of the country.

It is readily seen, therefore, that with modern plants having an output in excess of 200,000,000 feet annually and with timber estimated to last at this rate of cutting for 25 years, this is a most substantial enterprise. The company's output is sold in all parts of the country, and some is also exported.

The general sales offices are located at St. Louis, Mo., in charge of Mr. C. I. Millard, general sales manager, who has under him a large selling force, with branch offices in other principal cities.

The J. J. Newman Lumber Co. was organized in 1894, at which time it owned a limited amount of timber a few miles south of Hattiesburg, Miss. Finding it necessary to extend its operations, the company was reorganized in 1896, Messrs. F. L. Peck, John D. Porter, Scranton, Pa., and others coming into the concern. The broad development of the company has been due to these interests, who readily recognized the splendid opportunities of that section.

The present officers are: F. L. Peck, president, Scranton, Pa.; John T. Porter, treasurer, Scranton, Pa.; G. F. Royce, secretary, Scranton, Pa.; E. S. Peck, general manager, Hattiesburg, Miss., and W. J. Haynen, assistant general manager, Hattiesburg, Miss.



THE LEADITE GASOLINE FURNACE.

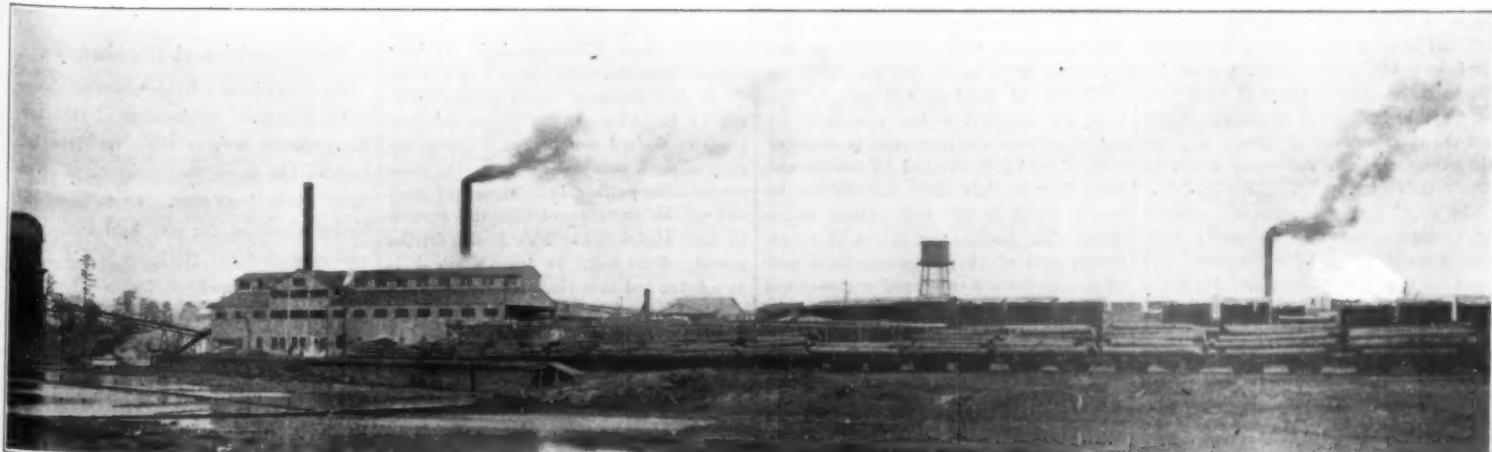
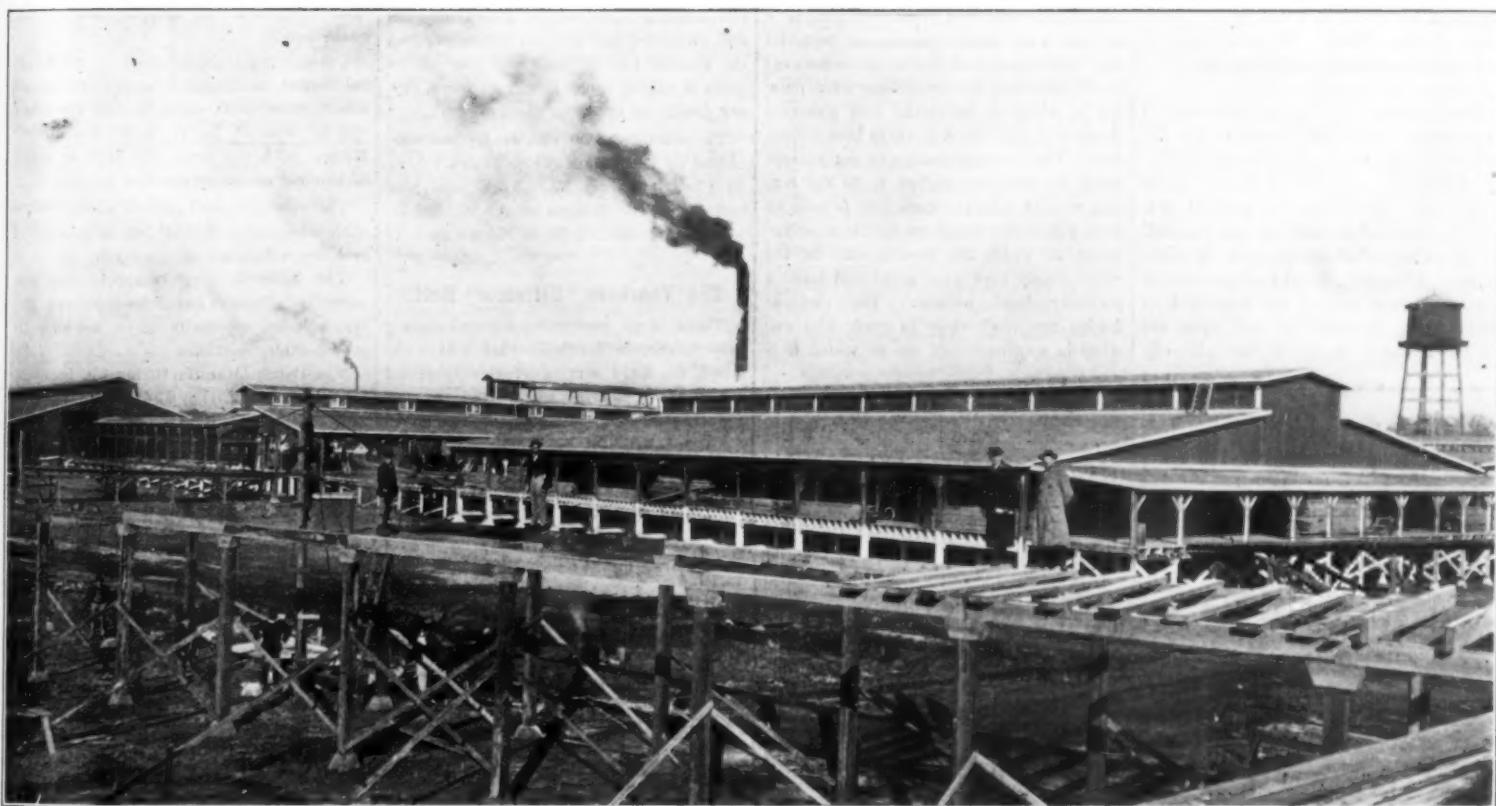
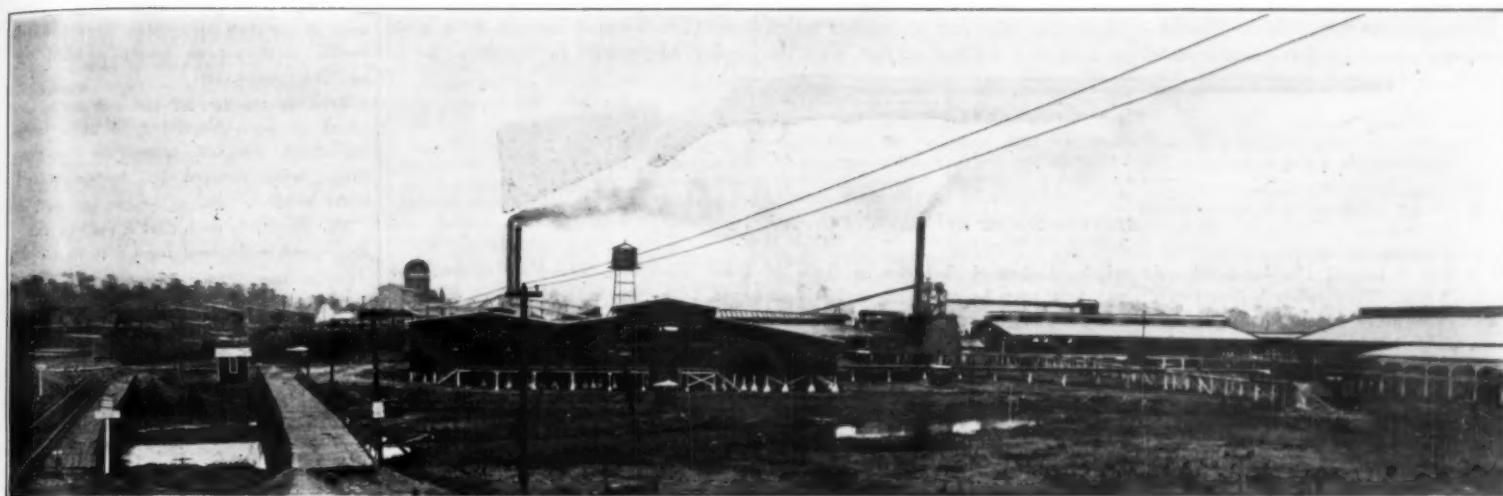
leadite, as the heat can be regulated just as it is wanted. The builder says:

"The furnace is absolutely safe and non-explosive. The tank, or reservoir, is protected from the heat by a shield, which allows the air to circulate freely over it, thereby keeping it perfectly cool.

plant at that point, which was burned. This plant will have a cutting capacity of 250,000 feet daily.

The main structure is 60x230 feet, connecting on the end with steel docks 212 feet in length. The machinery or lower floor is 16 feet high, which gives ample

VIEWS OF NEW PLANT J. J. NEWMAN LUMBER CO., HATTIESBURG, MISS.



New Stevens Repeating Shotgun.

Trap shooters will be interested in the accompanying view of the No. 522 Stevens repeating shotgun, the latest effort of John Browning. This gun is fitted with Stevens compressed forged barrel, high-pressure steel, bored for nitro powder, fitted

ing machinery in its yards at Ogdensburg, N. Y.

The dredge is fitted with a powerful chain of buckets of one and one-quarter cubic yards capacity each, and the ladder frame is of steel and of sufficient length to work to a depth of 51 feet, while the

ated the merits of the American type of dipper dredges for certain classes of work, it is equally true that in this country we have not appreciated the elevator type of dredge, and that any failures that may have occurred are due to lack of proper adaptability to conditions, or to



STEVENS NO. 522 REPEATING SHOTGUN.

with hollow matted rib, furnished only full chocked. The receiver is drop forged, black oxide finish. The action is hammerless, visible locking block and safety firing pin. The stock is fancy walnut checked, finely finished with rubber butt plate. This gun is manufactured by the J. Stevens Arms & Tool Co. of Chicopee Falls, Mass.

An Interesting Elevator Dredge.

We illustrate herewith a large elevator dredge operated by the Daly & Hannan Dredging Co. of Ogdensburg, N. Y., on its work in Boston harbor. This vessel is of interest because of the work it has done and because it is practically a home-made machine, fitted up by the contractor out of a cargo steamer originally built for service on the lakes.

The company had been executing its work solely with dipper dredges. The encroaching depth of the channels to our sea-coast harbors, and the fact that in many places they are in somewhat exposed situations, combined to severely tax the ability of a dipper dredge to execute this class of work efficiently, mainly on account of the spud question and the fact that at great depth the angle of pull upon the dipper becomes so acute that the effi-

width of channel that can be made at one time may be as much as 700 feet. Complete machinery is installed for raising and lowering the ladder and working the mooring lines, so that the dredge can make a continuous feed over the bottom up to a full capacity of the buckets when in a good bank. The material is discharged into scows alongside, which are of 1800 cubic yards capacity each, and they are towed to sea by a powerful tug, which can go out in almost any weather.

This type of dredge is an interesting example of the evolution of modern requirements and the construction of a special machine to meet them. Having here to deal with large volumes of material over wide areas and in a more or less exposed situation, the conditions were present in which a seaworthy and powerful elevator dredge could work to best advantage. The elevator dredge is not encumbered by spuds to anchor it to the bottom or hold it to its work, but is held by lines attached to anchors, by the manipulation of which the buckets can be fed continuously over wide areas and leave a perfectly level bottom. The elevator dredge can work close to grade and can work in any moderate sea in which it is

being improperly carried out in detail, or both. The truth is that each type of dredge has its own special field of work to which it is best adapted, and to be successful these conditions and the limitations of each type must be fully recognized and the details in all cases properly carried out. Heretofore the great wear and cost of maintenance and repairs of the buckets, pins and links, etc., of the elevator dredge has been an argument against it, but in the present case this wear has been greatly reduced by better design of details and the use of manganese steel for these parts. After a year's service the buckets, with their pins and bushings, are in good condition, and the general loss of time and cost of repairs is stated to be less than for a dipper dredge on the same class of work.

The machinery for this dredge was furnished by the Atlantic Equipment Co. of 30 Church street, New York, and was built from the designs of A. W. Robinson, M. Am. Soc. C. E., of Montreal.

The Voorhees "Ultimate" Belt.

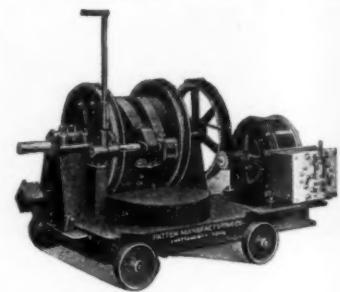
There is an increasing demand among mine operators for belts that will withstand the hard service of elevating and conveying, a service where cost per ton for transmission is the main considera-

The New Patten Hoist.

People interested in improved hoisting equipment are invited to investigate the new hoist offered by the Patten Manufacturing Co. of Chattanooga, Tenn. This hoist is designed to operate the standard double platforms so generally used by building contractors.

Friction clutches of the old metal-to-metal or wood-to-metal type have been eliminated, complete control of the machine being secured by lever-operated brake bands.

The control is such that a perfect variable speed is obtained from zero to maxi-



THE NEW PATTEN HOIST.

mum by graduating the pressure on the brake bands.

Cable reversal is obtained by mechanical means, so that any engine or motor which runs continually in one direction can be used for power, making available for use with this hoist any kind or make of electric motor or gasoline engine.

The variable-speed control allows hoists with cable speed of 1000 feet to be started and stopped slowly without jar.

The hoist is very compact, and apparently offers a fine substitute for the steam hoist, especially when working in crowded city sections.

The Patten Manufacturing Co. issues a catalogue illustrating and describing this new machine.



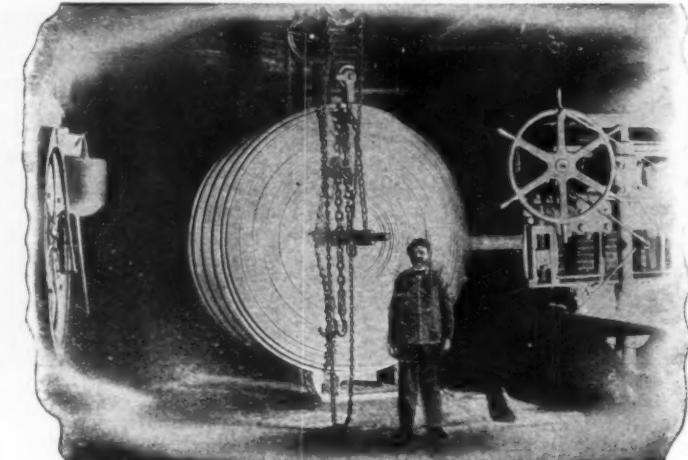
AN INTERESTING ELEVATOR DREDGE.

ciency is reduced. The work in the entrance to Boston harbor covers a large area and is being excavated to 35 feet below low water, which requires a dredge able to make about 50 feet at high tide, and Captain Daly came to the conclusion that the elevator type of dredge, if properly constructed for the work, would be more satisfactory.

The vessel which the company selected for reconstruction was a heavily built wooden steamer called the "Denver," 242 feet long by 36 feet beam and 21 feet 6 inches deep. This vessel was built in the days when first-class oak timber could be had of better quality than now, and her frames and planking are immensely strong and perfectly sound. She is fitted with a pair of fore-and-aft engines of 700 horsepower, and is a complete self-propelling vessel, able to go to any part of the world. The company reconstructed this vessel and fitted it with a set of powerful dredg-

possible to hold the scows alongside. By a special arrangement the anchorage lines are carried out a considerable depth under water so as not to interfere with the navigation of the tugs and scows. The lines are attached to heavy anchors set out a suitable distance, the position of each of which is marked by buoys, and from time to time these anchors can be floated ahead by the tug without undue delay. The buckets are driven at an ordinary rate of 14 per minute by a pair of double tandem-compound engines, and the discharging capacity when the buckets are full is therefore over 1100 cubic yards per hour. All the operations of the dredge, including the winches, are under the control of one man, a complete set of levers in a pilot-house being provided.

It is well known that the elevator type of dredge has been long and successfully used abroad, and while it may be said that foreign engineers have not appreci-



"ULTIMATE" PEELT, 540 FEET LONG, 36 INCHES WIDE.

tion. To meet this demand the Vorhees Rubber Manufacturing Co., Jersey City, N. J., has patented its "Ultimate" conveyor belt. The company claims this belt has the desired number of longitudinal plies of duck required for strength, while the wearing surface is composed of duck and rubber so arranged that the duck is at right angles to the rubber in the driving portion of the belt. In other words, it is so constructed that the ends of the fabric constitute the wearing surface of the belt. While the idea is said to be a new one in the construction of conveyor belts, it is claimed that the "Ultimate" has been thoroughly tested by several years' service. An accompanying view represents an "Ultimate" belt made for one of the important copper-mining companies. This belt is 540 feet long and 36 inches wide, eight-ply, and weighs 6800 pounds.

For Industries at Honaker, Va.

There has been a decided interest shown in the industrial development of Honaker, Va., and its section since the Honaker Lumber Co. began the construction of its large plant last year. Last week the business men of the city held a meeting and organized the Business Men's Association. The need of industrial enterprises was discussed and committees were appointed to secure the establishment of a handle factory, a brick plant, a steam laundry, a telephone system and other enterprises. The officers of the new organization are: Dr. J. H. Lockhart, chairman; C. P. Rice, vice-president; J. M. Carr, secretary; Dr. N. E. Hartsock, treasurer.

Construction Department

TO OUR READERS!

In order to understand and follow up properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ADDRESS FULLY

To insure prompt delivery of communications about items reported in these columns, the name of one or more incorporators of a newly incorporated enterprise should be shown on the letter addressed to that town, or to the town of the individual sought, as may be shown in the item, as sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. This will help to insure prompt delivery of your communication, although it is inevitable that some failures on the part of the postal authorities to deliver mail to new concerns will occur.

WRITE DIRECTLY

It is suggested to advertisers and readers that in communicating with individuals and firms reported in these columns, a letter written specifically about the matter reported is likely to receive quicker and surer attention than a mere circular.

The Daily Bulletin of the Manufacturers' Record is published every business day in the year for the purpose of giving the earliest possible news in regard to new industrial, railroad and financial enterprises organized in the South. It is invaluable to contractors, manufacturers, engineers and all others who want to get in touch at the earliest moment with new undertakings or the enlargement of established enterprises. The subscription price is \$25 a year. All advertising contracts in the Manufacturers' Record extending over a period of three months include a subscription for the length of time of the contract to the Daily Bulletin.

BRIDGES, CULVERTS, VIADUCTS

Ark., Fort Smith.—Arkansas Bridge Co. incorporated with \$25,000 capital stock by Albert E. Black (president), Samuel McLoud and Harry P. Dailey.

Ark., Little Rock.—Argenta Street Railway Co. applied to Congress for privilege to construct bridge across Arkansas River; estimated cost \$300,000.

Ark., Rogers.—Arkansas, Oklahoma & Western Railroad, W. R. Felker, president, main office, Rogers, Ark., will construct one steel and 21 wooden bridges across White River in connection with 35 miles of railroad, now under construction, from Rogers to Huntsville, Ark. (See "Machinery Wanted.")

Ga., Columbus.—City voted \$100,000 bond issue for building proposed concrete or steel bridge across Dillingham St.; W. C. Campbell, City Engineer. (Previously noted.)

Ga., Columbus.—Central of Georgia Railway Co., C. K. Lawrence, chief engineer, Savannah, Ga., awarded contract to American Bridge Co., 30 Church St., New York, for steel work in construction of bridge across Chattoochie River recently noted; will consist of plate girders on concrete piers; bids for concrete work received February 12.

Ky., Louisville.—Kentucky & Indiana Bridge Co. contemplates rebuilding bridge across

Ohio River at 31st St.; railroads interested include Baltimore & Ohio Railroad, A. M. Kinsman, chief engineer, Baltimore, Md.; Southern Railway, W. H. Wells, chief engineer construction, Washington, D. C., and others.

Md., Williamsport.—Washington & Berkeley Bridge Co. applied to Legislature for authority to construct bridge over Potomac River, another over Chesapeake & Ohio Canal and one over tracks of Western Maryland Railroad.

Miss., Gulfport.—Harrison County Supervisors awarded contract to Austin Bros., Atlanta, Ga., for construction of steel span or cable bridge over Red Creek; cost \$3000; no machinery or material needed. (Recently mentioned.)

N. C., Wentworth.—Rockingham County Commissioners are considering construction of \$10,000 bridge across Dan River.

Okla., Bixby.—Tulsa County Commissioners, Tulsa, Okla., awarded contract to Canton (O.) Bridge Co. at \$4975 to construct 125-foot bridge across Snake Creek.

Okla., Tulsa.—Oklahoma Union Traction Co. contemplates constructing bridge across Arkansas River.

Tenn., Chattanooga.—City Council authorized Mayor to borrow \$20,000 for reconstruction of McCallie Ave. viaduct; bids to be opened March 1; Robert Hooke, City Engineer. (Recently mentioned.) (See "Machinery Wanted.")

Tex., Rely.—T. H. Landon, Rely, is engineer in charge of construction of bridge for Estacado & Gulf Railway (contract recently noted awarded to M. F. Leonard, Bowie, Texas); work consists of 15,000 feet of pile bridges over four miles of grade leading into Rely.

Tex., Laredo.—National Railways of Mexico, E. N. Brown, president, 25 Broad St., New York, is proceeding with plans for \$300,000 structure (recently noted) to be erected across Rio Grande River; six 175-foot deck spans; concrete piers and abutments; C. G. Delo, engineer maintenance of way, Mexico, Mex.

Va., Bristol.—City has not awarded contract for building bridge (recently noted to be constructed across Beaver Creek), having under consideration construction of concrete arch bridge in lieu of steel and iron structure, as first proposed; will open bids March 1; plans and specifications on file at office of J. W. Mort, chairman street committee. (See "Machinery Wanted.")

W. Va., Thacker.—Thacker Coal Mining Co. will construct bridge across Tug River.

W. Va., Parkersburg.—Wood County Commissioners and Board of Affairs will open bids February 19 for construction of iron bridge across Worthington Creek at Staunton Ave.; each bidder to furnish plans and specifications; C. Skidmore, County Engineer.

W. Va., Parkersburg.—Wood County Commissioners will construct bridge across Ohio River at Juliana St.; estimated cost \$55,000.

CANNING AND PACKING PLANTS

Ark., Bald Knob.—W. T. Evans has closed contract with Springfield (Mo.) company to establish canning factory.

Fla., Jacksonville.—Cudahy Packing Co., South Omaha, Neb., will erect packing plant at Clay and Bay Sts.; two stories and basement; brick and reinforced concrete; 42x95.6 feet; will install ice plant; estimated cost \$12,000.

Mo., St. Louis.—Chas. Wissmath & Sons, 12th and Biddle Sts., have purchased 11½ acres of land, and will erect packing plant.

Va., Altavista.—Valley Packing Co. incorporated with \$10,000 capital stock; E. Cundiff, president; C. Q. Edwards, vice-president; P. H. McGill, secretary; W. W. Akers, treasurer; is having plans prepared for erection of plant.

W. Va., Wellsburg.—Wellsburg Pure Food Canning & Preserving Co. incorporated with \$5000 capital stock by John R. Elsom, George C. Whitehead, W. C. Hogg and others.

CLAYWORKING PLANTS

Ga., Atlanta.—Fire-brick.—Kilian Fire-Brick Co. incorporated with \$25,000 capital stock by Gordon Hiles, Alex. W. Smith and Alex. W. Smith, Jr.; to manufacture brick and all-clay products.

Okla., Muskogee.—Brick.—Francis Vitric Brick Co. (recently reported incorporated)

will manufacture vitrified paving and building brick; daily capacity 200,000; machinery purchased; Charles Francis, president and manager; George Maxwell, vice-president; A. W. Shulthis, secretary-treasurer.

S. C., Georgetown.—Bricks and Tile.—George town Brick Co. organized with George B. Sanders president, L. Gluck secretary-treasurer; will develop brick clay deposits on Sampit River and establish plant for manufacturing brick and roof tiling.

S. C., Greenville.—Unit Brick.—Carolina Brick & Tile Co., Charlotte, N. C., will establish unit brick factory; plant will have 30,000 daily capacity.

Tex., Seguin.—Paving and Face Bricks.—Seguin Vitrified Paving & Face Brick Co. increased capital stock from \$60,000 to \$75,000.

W. Va., New Cumberland.—United States Porcelain Co., Findlay, O., has purchased six-kiln plant of Superior Porcelain Co. and will enlarge.

W. Va., Williamstown.—Pottery.—Marietta Rustic Co. incorporated with \$5000 capital stock by George White, Charles W. Schramm, Martin F. Noll and others, all of Marietta, Ohio; to manufacture gas logs and other articles from clay. (Martin F. Noll and others lately noted as organizing company.)

COAL MINES AND COKE OVENS

Ky., Pineville.—Wallsend Coal & Coke Co., Wallsend, Ky., purchased additional coal lands near Pineville; will install electric haulage and undertake development of mines.

Mo., Rich Hill.—Atlas Coal Mining & Mercantile Co. contemplates increasing capital stock from \$20,000 to \$35,000.

Tenn., Westbourne.—R. O. Campbell Coal Co., J. B. Campbell, vice-president, Gould Bldg., Atlanta, Ga., and Empire Bldg., Knoxville, Tenn., will install compressor plant on coal property recently noted purchased; output to be trebled; correspondence to be addressed to J. D. Cain, Westbourne.

Tenn., Caryville.—Red Ash Coal Co., C. M. Moore, president, will expend about \$30,000 on electric equipment, contract recently noted awarded; alternating electric plant, including 185-kilowatt generator, two 150-horsepower and one 19x18 Harrisburg engines, six-ton General Electric locomotive, fan and two No. 6 Sullivan machines; this machinery additional; daily capacity of plant, 600 to 700 tons coal; company has let contract for 44x58-foot fireproof brick building.

Tenn., Nashville.—Pinner Coal Co. incorporated with \$25,000 capital stock by D. H. Pinner, W. H. Cole, A. H. Robinson and others.

Tenn., Nashville.—Pinner Coal Co. incorporated with \$25,000 capital stock by D. H. Pinner, W. H. Cole, A. H. Robinson and others.

Va., Pennington Gap.—John W. Carter purchased coal and timber land.

W. Va., Charleston.—Lewis Coal & Coke Co. incorporated with \$50,000 capital stock by C. L. Lewis, W. W. Lewis, C. B. Backus, all of C. L. Lewis, W. Va., and others.

W. Va., Clarksburg.—Righter Coal & Coke Co. incorporated with \$25,000 capital stock by George D. McCreary and Lewis J. Levick, both of Philadelphia, Pa.; Charles P. Hunt, Wilkes-Barre, Pa., and others.

W. Va., Charleston.—Cedar Run Collieries Co. incorporated with \$25,000 capital stock by H. P. Kelley, J. S. Miller and J. S. Hill.

W. Va., Clarksburg.—Jackson Land & Mining Co. (previously reported incorporated with \$60,000 capital stock) taken over land now being operated under lease; no further machinery needed; Caroline M. Jackson, president; M. J. Stiles, vice-president; Madeline Jackson, treasurer; S. B. Stiles, secretary.

W. Va., Hatfield.—Mary Helen Coal Co. incorporated with \$50,000 capital stock by T. C. Berger, S. V. Preston, Howard Early and S. J. Dickenson, all of Chattooy, W. Va., and others.

W. Va., Uniontown.—R. W. Playford and associates purchased 401 acres of coal land in Battelle district for \$53,630.

W. Va., Widemouth.—Louis Carr, Falls Mills, W. Va., purchased 500 acres of coal and timber land for \$25,000 and will develop.

CONCRETE AND CEMENT PLANTS

Okla., Enid.—J. Myers will erect plant to manufacture concrete building blocks.

COTTON COMPRESSES AND GINS

Ark., Helena.—Solomon Moore Land Co. will rebuild burned ginning plant. (Lately mentioned.)

Ga., Albany.—Rawlins Gin Co. incorporated with \$9000 capital stock by R. G. Riley, W. W. Rawlins and A. J. Lippitt.

N. C., Raleigh.—William A. Simpkins will erect cotton gin; contract for machinery awarded.

S. C., Alken.—Levels Ginning Co. incorporated with \$5000.

S. C., Beaufort.—Macdonald, Wilkins & Co., St. Helena Island, P. O. Frogmore, S. C., will, it is reported, establish cotton gin; estimated cost, \$25,000.

S. C., Starr.—Geer, Sexton & Tate will open bids July 1 for rebuilding cotton gin recently reported burned; cost \$2000.

Tex., McAllen.—McAllen Ice & Power Co., R. S. Pershing, president, purchased four standard all-steel cotton gin (Murray) and will erect building in May; cost \$5000.

Tex., Donna.—Hill Hooks and E. M. Ruthven, both of Mercedes, Tex., will erect cotton gin.

Tex., Waxahachie.—Farmers' Gin Co. has increased capital stock from \$20,000 to \$30,000.

COTTONSEED-OIL MILLS

Ala., Dothan.—Farmers' Cotton Oil Co. organized with \$50,000 capital stock, with W. P. Newton president, O. R. Morgan vice-president, J. W. Tipton secretary-treasurer, to establish cotton-oil mill. (See "Machinery Wanted.")

Aia., Montgomery.—Farmers' Cotton-oil Co., G. N. Hinson, president, Chattanooga, Tenn., will erect cotton-oil mill.

S. C., Batesburg.—E. Jones Company will install oil mill.

DRAINAGE AND IRRIGATION SYSTEMS

Fla., Manavista.—Atwood Grapefruit Co. awarded contract to J. P. Campbell, 222 East Bay St., Jacksonville, Fla., for installation of irrigating plant on 230-acre grove (not 23 acres, as recently incorrectly noted).

La., Beulah (not a postoffice).—St. Charles Land Co., G. A. McWilliams, Walnut, Ill., president, has plans for drainage and development of 3200 acres in St. Charles parish, 15 miles from New Orleans. (See "Land Developments.")

Miss., Greenwood.—City issued \$20,000 of bonds for drainage; plans are being made; Gid. Montjoy, 109 Market St., Mayor. (Previously noted.)

Mo., Warrensburg.—Blackwater Drainage District No. 1 of Johnson county will open bids March 10 for clearing right of way and excavating main ditch, straightening Blackwater Creek, containing 1,000,000 cubic yards of earth, and laterals and small ditches, containing 225,000 cubic yards of earth; Robert T. Grover, deputy secretary; T. O. Stanley, engineer. (See "Machinery Wanted.")

Oka., Minco.—Grady County Commissioners, Chickasha, Okla., will consider drainage of 2000 acres of land on Boggy Creek. C. H. Campbell and B. B. Owen are promoters.

Tenn., Trenton.—H. P. Farrar, Jackson, Tenn., has completed survey of proposed canal to drain about 18,000 acres of land in vicinity of north fork of Three Forked River; length of canal, 26 miles; width at top from 32 to 35 feet, and at bottom 25 feet; depth, eight feet; estimated fall per mile, three feet; estimated cost of excavating canal, independent of using river, \$82,000.

Tex., Sugarland.—Sugarland Improvement Co., W. T. Eldridge, president, acquired remaining 500 acres of Cunningham plantation, formerly owned and operated by Texas Sugarland Co.; plans to construct irrigation and drainage system, divide entire plantation into small farms, extend railroad, etc.; company proposes to purchase cane from farmers instead of growing its own products at heretofore; construction of canal has begun. In addition to industries located at Sugarland, it is contemplated to erect during summer cotton gin, ice factory, branch of Seely Mattress Co., canning and preserving plant, etc.

ELECTRIC-LIGHT AND POWER PLANTS

Ala., Roanoke.—City purchased water-power site with 75-foot fall seven miles from city; contemplates developing 150-kilowatt plant for city lighting; W. Oscar Orr, superintendent municipal electric-light and water-works.

Ala., Speigner.—State Convict Bureau of Alabama will open bids February 26 for furnishing generators, turbines, headgates, floodgates, crane, governors, etc., for proposed hydro-electric plant at Speigner; Edgar B. Kay, engineer University of Alabama, University, Ala. (See "Machinery Wanted.")

Fla., Milton.—City will vote on issuance of \$10,000 of bonds for construction of water-works, sewer system and electric-light plant. Address The Mayor.

Ga., Athens.—James White Power Co. awarded contracts for proposed water-power-electrical plant, to transmit 4000 horse-power; contract for 48x50-foot dam to Amburson Hydraulic Construction Co., 176 Federal St., Boston, Mass.; contract for hydraulic and electrical equipment to Allis-Chalmers Co., Milwaukee, Wis.

Ky., Louisville.—Udolpho Sned awarded contract to Toledo (O.) company for erection of power building; eight stories; 184x90 feet; reinforced concrete throughout; "mushroom" type of construction; fireproof; 600 windows, all with metal frames and wire glass; brick chimney 140 feet high on west side of building to stand over furnaces and boilers of power plant; freight and passenger elevators; 16 sprinklers for fire protection; estimated cost \$200,000; light, heat and power is to be furnished to manufacturing companies to whom space has been rented; plans by D. X. Murphy & Bro. of Louisville. (Previously mentioned.)

La., Lafayette.—City will extend light and water system. Address The Mayor. (See "Water-works.")

La., Monroe.—People's Ice Co., B. J. Sugar, vice-president, contemplates installation of electric-light plant to furnish city lighting. (See "Machinery Wanted.")

Miss., Ruleville.—City has contracted with Southern Power Co., Charlotte, N. C., to furnish electricity for lighting streets and residences; city is to purchase power and install lights and lighting apparatus; \$20,000 bond issue available. (Recently mentioned.)

Mo., Ozark.—Water Power & Light Co. incorporated capital stock from \$15,000 to \$20,000.

N. C., Brevard.—Brevard Light & Power Co. incorporated with \$25,000 capital stock by J. W. Chapman and others.

N. C., Cullowhee.—Cullowhee Copper Mining Co. will, it is reported, build water-power electrical plant on Tuckaseegee River.

N. C., Canton.—Canton Electric & Telegraph Co. incorporated with \$100,000 capital stock by G. H. Henson, J. N. Mease and R. H. Sorrells.

N. C., Raleigh.—Carolina Light & Power Co. will expend \$175,000 in improvements and additions to plant; these will include extension of power-house, erection of car barn, installation of two 1000-horse-power boilers, 2500-kilowatt turbine generator, automatic stokers, coal and ash handling equipment, etc.

S. C., Florence.—J. L. Barringer, W. J. Brown, P. A. Wilcox and S. S. Ingram will incorporate Black Creek Power Co. to develop water-power of Black Creek, estimated at 3500 horse-power.

Tenn., Huntingdon.—City voted issuance of \$10,000 of bonds for extending electric lights to East End, etc.; recently noted. Address The Mayor. (See "Road and Street Improvements.")

Tenn., Obion.—City will vote on issuance of \$35,000 electric-light bonds. Address The Mayor.

Tex., Midland.—Midland Water-Works & Power Co. will, it is reported, construct power and ice plant to cost \$40,000.

Va., Buena Vista.—Buena Vista Light & Power Co. is arranging to increase water-power and make improvements to plant.

Va., Lynchburg.—Hudson-Morgan Electric Co. incorporated with \$10,000 capital stock; Irby Hudson, president; Peyton L. Morgan, secretary-treasurer.

W. Va., Millville.—Winchester & Washington City Railway Co., Winchester, Va., has building plans and specifications for steam-power plant ready at office of P. O. Keillor, consulting engineer, Continental Bldg., Baltimore and Calvert Sts., Baltimore, Md.; \$15 deposit required; \$10 to be refunded; proposals received until February 25. (Machinery contracts recently noted awarded.)

FERTILIZER FACTORIES

Md., Baltimore.—Hubbard Fertilizer Co., Keyser Bldg., Calvert and German Sts., will expend \$15,000 on 100x204-foot storage building recently noted to be erected at Canton, Baltimore; plans and erection by company.

FLOUR, FEED AND MEAL MILLS

Ky., Arat.—Allen & Lewis will rebuild burned grist mill; new machinery. (Lately mentioned.)

N. C., Greensboro.—Piedmont Flour Mills Co. has purchased site and will erect flour mill of 125 barrels daily capacity.

FOUNDRY AND MACHINE PLANTS

Ala., Bessemer—Soil Pipe.—Bessemer Soil Pipe Co. plans addition to plant; will erect foundry 50x140 feet, install dipper, etc.; estimated cost, \$15,000.

Ala., Birmingham.—Pneumatic Jack.—Taylor Pneumatic Jack Co. contemplates establishing plant for manufacturing pneumatic jack invented by J. A. Taylor to lift cars through pneumatic pressure furnished from air-brake pipe; estimated cost of plant and equipment \$100,000.

Ala., Sheffield—Stoves.—King Stove & Range Co. will increase capacity of plant.

Ga., Columbus—Cotton Gins.—F. H. Lummus Sons Company will change title to Lummus Sons Cotton Gin Co. and increase capital stock from \$100,000 to \$500,000; will increase capacity of plant, erect tower and tank, install steam or electric pump, sprinkler system, etc.; E. F. Lummus, president; L. F. Lummus, secretary-treasurer.

La., Covington—Clarifiers.—International Clarifying Co. of New York, Geo. E. Sandford, president, Covington, will establish machine shop and plant for manufacturing Sandford clarifier.

Miss., Tylertown—Foundry.—Byington Machine Works, W. C. Byington, purchased machinery for repair shop and foundry recently noted; will repair machinery and manufacture engine jacks. (See "Machinery Wanted.")

Mo., Kansas City—Radiators.—American Radiator Co., 282 Michigan Ave., Chicago, Ill., awarded contract to Worden-Allen Company, Chicago, Ill., for construction of plant in Blue Valley; erect buildings overing five acres; manufacture cast-iron radiators and boilers for house-heating; plant cost \$25,000; plans by Nimmons & Fellows, Chicago, Ill. (Previously mentioned.)

Mo., St. Louis—Stoves.—American Stove Co. has purchased site for \$50,000 and will establish stove factory; plans are being prepared; estimated cost, \$500,000.

Tenn., Chattanooga—Ice Machines.—Carolina Ice Machine Co., Charlotte, N. C., will establish plant for manufacturing ice machines.

Tenn., Nashville—Sash Weights.—Acme Sash Weight & Foundry Co. Incorporated with \$10,000 capital stock by C. A. Horner, G. L. Albert, H. D. Saulpau and others.

Tenn., Abilene—Stove.—Reflector Stove Co. incorporated with \$10,000 by D. S. Kauffmann, W. S. Hatcher and S. R. Murphree.

Tenn., Penn City, P. O. Houston.—American Iron Works organized with \$50,000 capital stock by George W. Guild, Houston, and others to establish foundry.

Tenn., Stamford—Hay Presses.—Jones Hay Press Co., T. J. Pennell, president (recently noted to establish plant for manufacture of hay presses), has not definitely decided on location; will open proposals within present year for erection of three buildings, 50x150 feet, to cost \$10,000; architect not yet engaged; will install complete ironworking and foundry equipment; cost of machinery, \$15,000 or more; machinery proposals to be addressed to B. F. Daugherty, manager; will manufacture hay press and general foundry work. (See "Machinery Wanted.")

Tenn., Waco—Press.—John Baade contemplates organization of company to manufacture machine patented by Mr. Baade; machine for use in cotton gins and to press shingles, ceiling, brick, coal dust, building blocks, etc.

GAS AND OIL DEVELOPMENTS

Ala., Mobile.—Mobile Gas Co. has increased capital stock to \$3,000,000.

Ky., Lexington.—Lexington & Clay County Oil & Gas Co. incorporated with \$20,000 capital stock by J. M. Roche, W. J. Geary and J. F. Roche.

Ky., Somerset.—McKenna Oil Gas Co. incorporated with \$10,000 capital stock by E. T. Caffrey, B. J. Boland and Stanford McKenna.

Miss., Jackson.—Mississippi State Oil & Gas Co. incorporated with \$2000 capital stock by W. D. Hannah, R. M. Taylor and others.

Mo., Kansas City.—Kansas Natural Gas Co. plans expenditure of \$1,000,000 for improvements to system.

Okla., Grove.—Grove Oil, Gas & Mineral Co. incorporated with \$10,000 capital stock by H. D. Gibson, William P. Mayes and O. E. Williams.

Okla., Bartlesville.—Southern Oil Co. incorporated with \$250,000 capital stock by D. A. Nowland, J. E. Talbott and Pearl Severy.

Tex., Jefferson.—Citizens' Oil & Gas Co. incorporated with \$15,000 capital stock; W. B. Ward, president; W. P. Schulter, vice-president; B. F. Sherrell, manager; H. L. Eldridge, secretary and treasurer.

Tex., Markham.—Danner Oil Co. incorporated with \$5000 capital stock by R. H. Daner, F. J. Clemenger, Pat O'Byrne and others.

Tex., Saratoga.—Minta Oil Co. incorporated with \$10,000 capital stock by C. V. Prince, P. E. Bates, H. L. Graham and others.

W. Va., Morgantown.—Shinnston Oil & Development Co. incorporated with \$10,000 capital stock; Wm. A. Ream, president; S. N. Swisher, first vice-president; L. B. Harr, second vice-president; E. T. Schultz, treasurer; Howard L. Swisher, general manager; contemplates drilling wells in Shinnston district on leases held by company.

W. Va., Parkersburg.—Waterfield Oil & Gas Co. incorporated with \$25,000 capital stock by Charles E. Baab, Paulus Reps, Albert E. Dolinger and William E. Johnson.

W. Va., Parkersburg.—Braden-Betts Oil Co. incorporated with \$600 capital stock by Charles B. Braden, Burdette Woodyard, H. E. Sigler and others.

W. Va., Parkersburg.—Watson Drilling & Development Co. incorporated with \$25,000 capital stock by James A. Watson, C. E. Chalfant, R. E. Bills, all of Parkersburg, and V. S. Lynch, Buckhannon, W. Va.

ICE AND COLD-STORAGE PLANTS

Ala., Bouse.—Bouse-Swansea Ice & Cold Storage Co. organized with Eugene Greenwood, president; W. B. Taylor, secretary; will install 10-ton ice plant.

Fla., Mulberry.—E. H. Dudley, Mulberry Ice Works (recently noted to erect addition and increase capacity) has placed all orders for machinery and material.

Fla., Tampa.—West Tampa Ice Co. incorporated with \$25,000 capital stock; J. B. Cutler, president; R. Berry, vice-president; G. B. Tyler, secretary-treasurer.

Fla., Tampa.—Crenshaw Bros. awarded contract to J. C. McNeill & Co., Tampa, for erection of ice plant at Franklin and Scott Sts., and to N. J. Sutton, Jacksonville, Fla., for refrigerating plant; cost \$29,769.

Ga., Hartwell.—Julian McCurry has purchased plant of Hartwell Ice & Laundry Co. and will erect additional plant.

Ga., Savannah.—South Atlantic Packing & Provisions Co., W. S. Godley, president, will increase output of ice plant. (See "Miscellaneous Manufacturing Plants.")

Miss., Jackson.—Hoadley Ice Cream Co., Memphis, Tenn., reported to contemplate establishment of ice plant at Jackson. (See "Miscellaneous Manufacturing Plants.")

Miss., Jackson.—Mercantile Lumber Co. will install ice plant in Duttonville (suburb); daily capacity 25 tons; planned for future enlargements.

Miss., Meridian.—C. S. Carleton will install ice plant.

Mo., Kansas City.—Independence Ice & Cold Storage Co. has increased capital stock from \$50,000 to \$75,000.

Mo., St. Louis.—Anheuser-Busch Brewing Association awarded contract to Ruemmler-Dawley Manufacturing Co., St. Louis, for erection of ice plant (lately noted); will contain 600-ton-capacity freezing system, distilling plant, freezing tanks, 800,000-gallon water-cooling tower, etc.

Mo., St. Louis.—Charles Wissmath & Sons are having plans prepared for erection of ice and cold-storage plant.

Mo., Troy.—Troy Racket Storage Co., A. A. Kuhne, manager, awarded contract to T. R. Chewning, Troy, Mo., for erection of ice plant; 100x60 feet; concrete blocks; plans by Fuller, Coulter & Co., St. Louis, Mo.; machinery contracted for; daily capacity five tons ice and two tons refrigeration.

Mo., Valley Park.—Valley Park Ice & Supply Co. incorporated with \$25,000 capital stock to establish ice plant; will open bids in about 10 days for erection of 50x100-foot building; ordinary construction; cost \$3000; will install machinery to cost \$12,000; daily capacity, 12 tons of ice; Robert Sargent, president; A. Stugerward, vice-president; Dr. F. P. Knabb, secretary and treasurer. (See "Machinery Wanted.")

Okla., Hobart.—T. D. Turner Produce Co. will install cold-storage plant; daily capacity five carloads fruit and vegetables.

Okla., Enid.—Enid Ice & Fuel Co. awarded contract for installation of 75-ton ice plant, increasing capacity to 125 tons daily; will award contract for construction of storage plant giving additional floor space of 100,000 cubic feet; install 750-horse-power motors, patent stoker; coal bunkers, 400 tons capacity; coal-handling machinery, etc.

Okla., Holdenville.—Holdenville Ice & Electric Co. incorporated with \$50,000 capital stock by W. M. Dunn, L. P. Sammons, James A. Chapman, all of Holdenville; C. W. Dally, McAlester, Okla., and H. T. Douglas, Shawnee, Okla.

Tex., Canadian.—A. L. Conrad, engineer, is not interested in establishment of ice plant recently noted.

Tex., McAllen.—McAllen Ice & Power Co. recently noted incorporated with \$15,000 capital stock, will operate 10-ton ice plant previously noted purchased; in connection will operate branch of Brownsville Bottling Works; R. S. Pershing, president and treasurer; Albert Sammons, vice-president; R. P. Booye, secretary.

Tex., Midland.—Midland Water-Works & Power Co. will install ice and power plant; cost \$40,000.

IRON AND STEEL PLANTS

Ala., Gadsden.—Iron Furnace.—Southern Iron & Steel Co., W. H. Hassinger, president, Birmingham, Ala., has blown in blast furnace.

Ga., Cedartown.—Iron Furnace.—Alabama & Georgia Iron Co., A. Griggs, president, has blown in Cherokee furnace, to which repairs have been made.

Okla., Enid—Steel.—American Angle Steel Post Co., John C. Moore, president, purchased site for erection of rolling mill; will manufacture angle steel, to be converted into posts. (Company previously noted incorporated, etc., under "Metal-Working Plants.")

LAND DEVELOPMENTS

Ala., Birmingham.—Duquesne Land Co. incorporated with \$10,000 capital stock by John C. Henley, Jr., president; John R. Hornady, vice-president; Leon W. Friedman, treasurer; Harry J. Burney, secretary.

Ga., Rossville.—Kenney Realty Co. incorporated with \$15,000 capital stock by M. P. Kenney, J. Lee Allen, Byron Gager and others, all of Chattanooga, Tenn., to develop land in Hamilton and Walker counties.

Ky., Lexington.—Eastern Kentucky Mineral Lands Co. Incorporated with \$15,000 capital stock by W. O. Bradley, D. B. Redwine, J. S. Botts and G. W. Gourley.

Ky., Wilmore.—Southwestern Land Co. incorporated with \$10,000 capital stock by J. C. Johnson, H. P. Carpenter and J. G. Parrish.

La., Beulah (not a postoffice).—St. Charles Land Co., G. A. McWilliams, president, Walton, Ill. (previously noted incorporated with \$400,000 capital stock), has perfected plans for drainage and development of 320 acres of land in St. Charles Parish, this being initial development of about 14,000 acres owned by company; engineering plans by John A. Kruse, Chicago, Ill.; land is being divided into farming tracts of 10 or more acres; town site of Beulah is planned, to be located on Bayou des Allemands.

Mo., Springfield.—Chouteau Land & Mining Co. Incorporated with \$5000 capital stock by John O'Day, A. C. O'Day and E. H. Schollen.

N. C., Charlotte.—Mecklenburg Realty Co. (recently reported incorporated with \$10,000 capital stock) has organized with W. S. Lee, president; D. A. Tompkins, vice-president; W. H. Wood, treasurer; N. A. Cocks, treasurer; to develop Rock plantation (about 350 acres) for residential and manufacturing purposes.

N. C., Edgemont.—Edgemont Company reported incorporated with \$25,000 capital stock to develop townsite, erect summer houses and hotels, construct roads and install water-works and sewerage; J. R. Ervin, Lenoir, N. C., engineer in charge.

N. C., Wadesboro.—J. T. Patrick, John W. Gullidge and W. H. Morton have purchased 23 acres of land and will subdivide for residences.

N. C., Winston-Salem.—Forsyth Development Co. (recently noted incorporated with \$50,000 capital stock) will develop and deal in real estate; owns property north of

boulevard to Southern Railroad along Chatham Mill road; contemplates erection of houses; J. E. Kavanaugh, president; H. G. Chatham, vice-president; Robert S. Galloway, secretary-treasurer.

Tenn., Memphis.—Perkins Land & Lumber Co. incorporated with \$25,000 capital stock by H. E. Perkins, H. F. Harwell, L. E. Brown and Frank Colville.

Tex., Fort Worth.—Buena Vista Land Co. incorporated with \$10,500 capital stock by Duff H. Purvis, S. B. Cantey and John P. King.

Tex., Fort Worth.—College Heights Land Co. incorporated with \$5,600 capital stock by R. Vickery, W. E. Coleman and J. H. Miller.

Tex., San Antonio.—Southwest Texas Land Co. (recently reported incorporated with \$20,000 capital stock) has purchased 1500 acres of land and will develop townsite; 300 acres under cultivation and being irrigated from artesian wells; contemplates erection of church, school and hotel to cost \$25,000; W. L. Quinn, president; W. H. Dickson, vice-president; W. H. Russell, secretary and treasurer.

Va., Norfolk.—Greenway Park Corporation incorporated with \$6,000 capital stock; R. B. Jordan, president; C. M. Bain, secretary.

Va., Richmond.—Westham Land Co. incorporated with \$150,000 capital stock; A. L. McClellan, president; John Landstreet, vice-president; Thomas A. Smyth, secretary-treasurer.

LUMBER-MANUFACTURING PLANTS

Ala., Manistee.—Runyan & Burgoyne Lumber Co. incorporated by W. B. Runyan and C. R. Burgoyne, both of Pensacola, Fla.; purchased sawmill and other holdings of Manistee Lumber Co.

Ala., Mobile.—Hieronymous Docks & Lumber Co. incorporated with \$150,000 capital stock by William T. Hieronymous, Henry Hieronymous and George A. Hieronymous; succeeds Hieronymous Bros.

Ark., Horatio.—West-Otis Lumber Co. incorporated with \$75,000 capital stock by M. B. West, G. E. Otis, J. T. Green and others.

Ark., Pine Bluff.—W. A. Mathews & Co. have purchased 8882 acres of white oak timber.

Ga., Cartersville.—Ryne Bros. Manufacturing Co. will establish lumber plant; construction begun; contract for machinery awarded.

Ga., Columbus.—Muscogee Lumber Co. (recently reported organized to establish lumber plant) will manufacture rough and dressed lumber, also sash, doors, blinds and building material; will install machinery.

La., Arcadia.—Benoit Lumber Co., Monroe, La., is proceeding with construction of proposed plant. (See La., Monroe.)

La., Calhoun.—Benoit Lumber Co., Monroe, La., is constructing proposed plant by day's labor. (See La., Monroe.)

La., Monroe.—Benoit Lumber Co., main office, Monroe, incorporated with \$100,000 capital stock; H. T. Benoit, president, secretary and general manager; Walter T. Cheeks, vice-president; G. B. Vaughn, treasurer; will operate sawmills now under construction at Arcadia and Calhoun, La.; machinery purchased; daily capacity, 65,000 feet yellow-pine lumber.

Md., Hancock.—Hancock Planing Mill & Lumber Co. incorporated by S. Rinehart Sohill, Hancock; Raymond Hunter, Berkeley Springs, W. Va., and others to erect planing mill.

Miss., Crottstown.—Jones County Lumber Co. incorporated with \$50,000 capital stock by Geo. S. Leatherbury, Jr., James B. Cantrell and others.

Miss., Jackson.—Cromwell Lumber Co. plans construction of plant.

Miss., Jackson.—Mercantile Lumber Co., T. J. Allen, president and manager, purchased 10-acre tract for planing mill.

Miss., Jackson.—Mercantile Lumber Co. has purchased six acres of land in Duttoville (suburb) and will erect lumber mill; daily capacity 200,000 feet timber; planned for future enlargements.

Miss., Poplarville.—Koropp Lumber Co., F. Koropp, president, 4653 Hermitage Ave., Chicago, Ill., has purchased large tract of hardwood timber and will install hardwood mill.

Miss., Tylertown.—C. H. Stevens will establish plant to manufacture dressed lumber, etc. (See "Woodworking Plants" and "Machinery Wanted.")

Mo., St. Louis.—Louisiana Lumber Co. incorporated with \$50,000 capital stock by U. S. Musick and S. H. Caruthers, both of St. Louis; George W. James, Bernice, La.; V. M. Davis, Anseley, La., and W. B. Sandford, Springfield, Mo.

Mo., St. Louis.—Louisiana Lumber Co. incorporated with \$50,000 capital stock by George W. James, V. M. Davis, W. B. Sandford and others.

N. C., Bowden.—Bowden Lumber Co., A. R. Trumbull, president, main office, Norfolk, Va., has purchased band mill, etc., for improvements previously noted; daily capacity of plant, 120,000 feet lumber and lath.

N. C., Forney.—Norwood Lumber Co. purchased at \$225,000 the 15,000 acres Swain county timber land recently mentioned (under Asheville, N. C.); will remove band mill to this locality; capacity to be 50,000 feet daily; Louis Carr, president, will superintend erection of plant.

N. C., Wilmington.—Brunswick Wood & Coal Co. purchased mill machinery, leased and will operate plant of Stephens Construction Co.

Okla., Soper.—Soper Lumber Co. incorporated with \$5000 capital stock by C. L. Harris, G. V. Harris and C. J. Jackson.

S. C., Bennettsville.—Scott Lumber Co. has purchased 21½ acres of timber land and will install lumber plant.

S. C., Salem.—Oconee Lumber Co. incorporated with \$10,000 capital stock.

S. C., Blackville.—Manhattan Tie & Timber Co. incorporated with \$100,000 capital stock to manufacture crossties, telegraph and telephone poles, hardwood timbers, etc.; estimated daily capacity crossties, 600 to 1000; character and cost of machinery not yet decided; W. H. Felder, president, treasurer and manager; W. I. R. Felder, vice-president; D. P. Dellinger, secretary.

Tenn., Memphis.—May Bros. Lumber Co. will erect sawmill; daily capacity, 40,000 feet sawed lumber.

Tenn., Memphis.—Moffett, Bowman & Rush Lumber Co. will erect fireproof sawmill; daily capacity, 40,000 feet sawed lumber; construction begun.

Tenn., Memphis.—George S. Brown & Co. incorporated with \$100,000 capital stock by George C. Brown, L. E. Brown, Butler Smith and others.

Tex., El Paso.—Long Lumber Co. incorporated with \$50,000 capital stock by R. W. Long, Richard Caples and O. C. Zavish.

W. Va., Charleston.—Chesapeake Lumber Co. incorporated with \$10,000 capital stock by Harrison B. Smith, L. L. Jewell, C. G. McFarland and E. W. Adams.

W. Va., Ingleside.—John Woodhull, Dover, N. J.; Lewis D. Carey, Flanders, N. J.; John McClain and A. H. Bartley of Bartley, N. J., purchased from B. T. Johnson 800 acres hardwood timber for development; mainly oak and poplar. (Recently incorrectly noted under "Coal Mines and Coke Ovens.")

W. Va., Widemouth.—Louis Carr, Falls Mills, W. Va., purchased 500 acres of timber and coal lands and will develop.

METAL-WORKING PLANTS

La., New Orleans.—Beds.—Crescent Bed Co. has purchased site bounded by Dorgenois, Broad, Gravier and Perdido Sts. and will rebuild burned bed factory; daily capacity 800 iron beds, 300 spiral springs, 250 woven springs, 100 cots and 300 brass beds.

Md., Baltimore.—Steel Devices.—Pioneer Safety Device Co. incorporated with \$10,000 capital stock by Christopher Fitzberger, 2909 East Baltimore St.; W. G. Monberger, 602 West Cross St., and W. R. Nizer, 618 North Washington St.; to manufacture steel devices for submarine boats to enable crew to escape in case of accident; device patented by William S. Stevenson, 829 South Montford Ave.

MINING

Ark., Mena.—Slate.—D. W. Carter of Mena, B. M. Barnett and M. J. Harrington of Kansas City, Mo., have purchased and will develop 80 acres of slate land.

Ga., Columbus.—Fertilizer Filler.—Dixie Chemical & Mining Co. incorporated; M. F. Thomson, Jr., president and treasurer; Frank A. Phillips, vice-president and secretary; company operates filler plant for fertilizer plants; daily capacity, 100 tons per 10 hours.

Ky., Louisville.—Stone.—Jacob Stengel Company incorporated with \$5000 capital stock by Jacob Stengel, Urban J. Stengel and Charles M. Stengel.

Mo., Cartherville.—Henson-McDonald Mining Co. incorporated with \$25,000 capital stock by E. F. McDonald, R. C. Henson, A. C. McDonald and others.

Mo., De Soto.—Walther Mining Co. incorporated with \$70,000 capital stock by Otis M. Monroe, William C. Ballard and Theodore Walther.

Mo., Joplin.—Zinc and Lead.—Muskingum

Zinc & Lead Co. has leased 26½ acres of zinc and lead property and will develop; will erect 300-ton mill, electrically driven.

Mo., Phillipsburg.—Lead and Zinc.—Sam T. McDermott, B. B. Joffee, C. M. Blackmar and others of Kansas City, Mo., will develop lead and zinc property on line of Laclede, Dallas & Western Railroad, which they will construct.

Mo., St. Louis.—Sand.—Union Sand & Material Co., Liggitt Bldg., has increased capital stock from \$3,400,000 to \$6,000,000.

N. C., Spruce Pine.—Kaolin.—Harris Clay Co. and L. A. Berry, both of Spruce Pine, and T. S. Deltor, Williamsport, Pa., have purchased and will develop Beaver Creek Mine, estimated to contain 600,000 tons kaolin.

Okla., Lawton.—Stone.—Lawton Stone Co. incorporated with \$10,000 capital stock by E. J. Tocherman, S. K. Richards and George Boone.

Va., Bristol.—Stone.—Bristol Lime & Stone Co. incorporated with \$50,000 capital stock; J. A. Dickey, president; A. B. Whiteaker, vice-president; R. W. Kelly, secretary-treasurer.

MISCELLANEOUS CONSTRUCTION WORK

Ark., Woodson.—Levee.—Woodson Levee District Board, Gordon Greenfield, president, awarded contract to Adams & Peterson, Fort Worth, Tex., at 16.1 cents per cubic yard for construction of nine miles levee, 165,700 cubic yards; eight culverts, eight gates; floodgate, reinforced concrete; will drain about 5000 acres; estimated cost, \$45,000; contract for concrete work was not awarded; Lund & Hill, 20½ West 2d St., Little Rock, Ark., are engineers. (Recently mentioned.)

Mo., Kansas City.—Levee.—City will vote in April on issuance of \$5,000 of bonds for levee improvements. Address The Mayor.

Okla., Oklahoma City.—Canal.—Oklahoma County Commissioners will soon award contract for construction of canal in drainage district No. 1; estimated cost, \$90,000.

Tex., Austin.—City will construct dike between new bridge and South Austin; State granted permission to use small island in Colorado River for this purpose; C. E. Leonard, City Engineer.

MISCELLANEOUS ENTERPRISES

Ala., Birmingham.—Construction.—Carrigan & Lynch Construction Co. incorporated with \$20,000 capital stock; J. L. Carrigan, president; E. F. Emerson, vice-president; C. O. Lynn, secretary-treasurer.

Ala., Camp Hill.—General Supply.—Camp Hill Supply Co. incorporated with \$5000 capital stock by W. M. Cousins, B. R. Weed, J. J. Langley and others.

Ark., Nettleton.—Rice.—J. De Witt Arnold, Albany, N. Y., and others, it is reported, will expand \$150,000 in rice cultivation.

Fla., Tampa.—Resort.—Joe S. Richardson has acquired five-year lease on Sulphur Springs property, including hotel, and will expand \$25,000 for improvements.

Ga., Atlanta.—Publishing.—Forum Publishing Co. organized by Silas L. Morris, president; W. H. Young, vice-president; J. P. McGraw, secretary-treasurer; offices, 25 West Alabama St.

Ga., Dalton.—Poultry Farm.—J. Henry Smith, L. D. Routh and Harry C. Routh will establish poultry farm; will erect buildings, pens, etc.

Ga., Savannah.—Abattoir.—South Atlantic Packing & Provision Co., W. S. Godley, president, will establish abattoir and stockyards on eight acres of land; abattoir will have capacity of 300 head of stock; concrete construction; stalls in stockyard to have cement floors; will also install 50-ton ice plant; cost of buildings \$15,000; machinery mainly purchased. (See "Machinery Wanted.")

Ky., Lexington.—Concrete Construction.—Vernon-Forman Company incorporated with \$2500 capital stock by T. V. Forman, president; Howard Forman, vice-president; T. T. Forman, treasurer.

Ky., Lexington.—Stone.—Lexington Crushed Stone Co. (recently reported incorporated with \$1500 capital stock) will establish plant to manufacture crushed stone; install machinery to cost \$3000; capacity 175 cubic yards per 10 hours; Culley Crews, president, Trust Company Bldg.; E. Lanahan, vice-president; T. V. Forman, secretary and treasurer. (See "Machinery Wanted.")

Ky., Louisville.—Publishing.—Free Press Co. incorporated with \$1500 capital stock by E. L. Weber, Homer Gordon, both of Louisville, and W. S. Forrester, Anchorage, Ky.

Ky., Louisville.—Publishing and Trading.—Union Publishing & Trading Co. incorporated with \$1000 capital stock by S. S. Silberberg, R. Hambauger and M. G. Moore.

Ky., Louisville.—Garage.—Henry M. Baumlester will erect garage on Broadway; brick; stone trimmings; two stories; tile roof.

La., Covington.—Steamship Company.—St. Tammany Steamship Co. incorporated with \$250,000 capital stock; C. F. Hardie, president; J. M. Sherrouse, vice-president, both of New Orleans, La.; Thomas S. Ellis, secretary-treasurer, Seattle, Wash.; to operate steamship line on Lake Pontchartrain, Miss.

La., Mansfield.—Pecans.—Clear Lake Pecan Co., J. B. Sloane, president and manager, recently reported incorporated with \$100,000 capital stock, is developing 100 acres of land in planting root-grafted trees; contemplates cultivating 400 or 500 acres more in potatoes, peanuts, corn, hay and general stock-raising.

La., New Orleans.—Household Supply.—Consumers' Household Supply Co. incorporated with \$50,000 capital stock by W. L. Mintenberger, John W. Woolfolk, Augustin B. Wheeler, Jr., and others.

Md., Baltimore.—Distributing.—Rural District Distributing Co. incorporated with \$120,000 capital stock by John B. Levy, Stuart M. Daniel and W. H. Grannan of Easton, Pa.

Mo., Columbia.—Hardware.—Charles Matthews Hardware Co. incorporated with \$16,000 capital stock by Charles Matthews, F. W. Dearing and Jennie K. Matthews.

Mo., cooler.—Mercantile.—Farmers' Union Gil & Mercantile Co. incorporated with \$6000 capital stock by T. W. Berderick, F. W. Brownfield, F. Crowder and others.

Mo., Kansas City.—Incinerating Plant, etc.—City will vote in April on issuance of \$200,000 bonds for incinerating plant; \$75,000 for parks; \$125,000 for fire department improvements. Address The Mayor.

Mo., Kansas City.—City Directory.—Gate City Directory Co. incorporated with \$18,000 capital stock by Edward M. Gould, G. B. Franke, August Redstedt and others.

Mo., St. Louis.—Storage Battery.—United Electric Storage Battery Co. incorporated with \$10,000 capital stock by Edgar Leussler, Paul W. Dichman and others.

Mo., St. Louis.—Garage.—George W. Ruhcam will erect garage on Delmar Ave.; 100x157 feet; roof of building supported by steel trusses; cost \$25,000.

Mo., St. Louis.—Contracting.—American Contracting Co. incorporated with \$2000 capital stock by August Manegold and Bernard D. Reilly.

Mo., St. Louis.—Printing.—Ramsay Calendar & Printing Co. incorporated with \$10,000 capital stock by W. W. Ramsay, John McMenamy and Frank A. MacManus.

Mo., St. Louis.—Contracting.—American Contracting Co. incorporated with \$2000 capital stock by Henry Ruckert, August Menegold and B. D. Reilly.

N. C., Beaufort.—Hardware.—Gaskill & May incorporated with \$125,000 capital stock by Ben May, A. F. Doane, Jr., and C. A. Clawson.

N. C., Charlotte.—Printing.—A. M. E. Zion Publication House has plans by R. C. Bibberstein, Charlotte, for erection of building on 2d and Brevard Sts.; main building 60x40 feet; brick; four stories; machinery building to be connected with main building; three stories and basement; brick; 40x50 feet; basement will be of concrete, constructed to give substantial foundation for presses, etc.; contract to be awarded soon. (Recently mentioned.)

N. C., Charlotte.—Construction.—F. Perry, Philadelphia, Pa., and others interested in organization of company to contract for reinforced concrete buildings.

Okla., Hominy.—Hardware.—Kelly Hardware Co. incorporated with \$3000 capital stock by C. L. Kelly, Bell Kelly and T. M. Harris.

Okla., Oklahoma City.—Grain Elevator.—R. H. Drennan, J. B. Norton and others are interested in plan to establish grain elevator.

Okla., Oklahoma City.—Printing.—Oklahoma Specialty Printing Co. increased capital from \$5000 to \$25,000.

Okla., Shawnee.—Construction.—Davis Construction Co. incorporated with \$2000 capital stock by W. M. Davis, D. F. Davis, D. D. Davis and others.

S. C., Florence.—Construction.—Johnson-Matthews Construction Co. incorporated with \$10,000 capital stock by E. M. Matthews, C. L. Johnson and J. Willard Ragsdale.

S. C., Seneca.—Steam Laundry.—E. R. Haynes, Easley, S. C., will establish steam

laundry; will install machinery. (See "Machinery Wanted.")

Tenn., Knoxville—Garage.—Knoxville Auto & Garage Co. Incorporated with \$50,000 capital stock by H. H. Thrasher, John R. Irby, W. H. Gass and others; having plans prepared for erection of garage; brick; two stories; 80x110 feet.

Tenn., Knoxville—Dyeing and Cleaning.—Phoenix Dye Works, J. A. Schifflers, proprietor, had plans prepared by Chas. A. Haynes, 612 Henson Bldg., Knoxville, for building recently noted; frame and semi-fireproof structure; 50x142 feet; cost \$2500; will open proposals April 1; no machinery needed.

Tex., Houston—Taxicab Company.—Houston Taxicab Co. incorporated with \$10,000 capital stock by E. F. Dupree, B. S. Davison and D. E. Simmons.

Tex., Houston—Plumbing and Heating.—Modern Plumbing & Heating Co. incorporated with \$10,000 capital stock; J. E. Fisher, president; H. H. Fisher, vice-president; C. A. Fisher, secretary-treasurer; office, Parker Bldg., 910 Fannin St.

Tex., Houston—Creosoting.—National Lumber & Creosoting Co., Fort Worth, Tex., will erect creosoting plant.

Tex., Taylor—Creamery.—J. H. Chisholm, Rockwell, Tex., will establish \$5000 creamery.

Va., Clifton Forge—Steam Laundry.—Clifton Forge Steam Laundry incorporated with \$25,000 capital stock; Eugene Mathews, president; E. W. Harris, vice-president; L. W. Harris, secretary-treasurer.

Va., Leesburg—Resort.—G. W. Stevens, Richmond, Va., has purchased White Sulphur Springs property and will, it is reported, expend \$50,000 in improvements.

Va., Lynchburg—Crematory.—Finance committee appropriated \$25,000 for garbage crematory.

Va., Staunton—Publishing.—Staunton Spectator Publishing Co. incorporated with \$25,000 capital stock; R. S. Turk, president; J. T. Harman, secretary.

Va., Tenn., Bristol—Electrical.—Hudson Morgan Electrical Co. incorporated with \$10,000 capital stock; Irby Hudson, president; Peyton L. Morgan, secretary-treasurer.

W. Va., Kenova—Building Supplies.—Kenova Lumber & Supply Co. (branch plant of Mingo Lime & Lumber Co. of Williamson, W. Va.) will be established to conduct general building-supply business; also jobbing rough lumber; paid-up capital \$30,000; Hoge Mason, president; Dr. L. H. Clarke, vice-president; E. O. Young, secretary; C. L. Rice, treasurer; W. E. Minter, general manager. (See "W. Va., Williamson.")

W. Va., Webster Springs—Publishing.—Webster Springs Publishing Co. incorporated with \$5000 capital stock by J. B. Haught, L. B. Hilleary, C. F. Hilleary and W. H. Hilleary.

W. Va., Williamson—Building Supplies.—Mingo Lime & Lumber Co., Hoge Mason, president, increased capital stock to \$80,000; will increase capacity; deal in general building supplies; is organizing branch plant at Kenova, W. Va. (See "W. Va., Kenova.")

MISCELLANEOUS MANUFACTURING PLANTS

Ala., Bay Minette—Creamery.—Bay Minette Creamery Co. plans to install steam-power plant and to erect cane press.

Ala., Birmingham—Mattress.—Perfection Mattress Co. has increased capital stock from \$10,000 to \$25,000.

Ala., Birmingham—Pianos.—Davis Piano & Player Manufacturing Co. Incorporated with \$100,000 capital stock; J. W. Davis, president; Mark Arrowsmith, treasurer; J. H. Ragsdale, vice-president, all of Pulaski, Tenn., and Jack R. Connor, secretary, Birmingham; will establish plant to manufacture pianos; erect fireproof building and install machinery. Address J. R. Connor, Birmingham. (See "Machinery Wanted.")

Ala., Birmingham—Bottling.—Pep-to-lac Bottling Co. incorporated with \$45,000 capital stock; E. Schwyer, president, Chattanooga, Tenn.; George F. Hobart, vice-president, Birmingham; George H. Gray, secretary, Birmingham; H. F. Latimer, treasurer, Birmingham.

Ala., Birmingham—Aerial Tramways.—Alabama Aerial Tramway Co. incorporated with \$25,000 capital stock; J. D. Kirkpatrick, president; J. K. Barton, vice-president; C. F. Wittichen, secretary-treasurer.

Ala., Gadsden—Loom Shuttle.—D. H. Beard, Alabama City, Ala., is organizing company to manufacture patented loom shuttle.

Ark., Little Rock—Coffee.—Fletcher Coffee & Spice Co. will erect coffee-roasting plant at 409 East Markham St.; contract awarded to Wolfe & Coombs, Little Rock; cost \$3000.

Ark., Texarkana—Peanuts.—George O. Morgan, St. Louis, Mo., will build peanut factory; four stories; brick.

Ark., Atlanta—Automobiles.—Steinhauer & Wright incorporated with \$10,000 capital stock by F. C. Steinhauer and E. L. Wright.

Ark., Atlanta—Automobiles.—Dixie Flyer Automobile Manufacturing Co. incorporated with \$100,000 capital stock by M. C. Morris, Stiles Hopkins, J. A. Chaney and W. K. Cleveland; temporary offices, 46 Courtland St.

Ark., Allapaha—Bakery.—H. W. James contemplates establishment of bakery. (See "Machinery Wanted.")

Ark., Rome—Huller, Compost Drills, etc.—Sanders Manufacturing Co., Dalton, Ga., will establish plant in North Rome for manufacturing pea hullers, compost drills, etc.

Ark., Waycross—Turpentine.—Waycross Turpentine Co. will install additional machinery to double capacity of plant.

Ky., Paducah—Dairy and Creamery.—Crick's Dairy & Creamery Co. Incorporated with \$300 capital stock by Houston Crick, Elvin Crick, L. F. Carson and F. D. Rodfus.

La., Covington—Sugar Refinery.—Geo. E. Sandford, president Sandford Manufacturing & Refining Co., is interested in plan for consolidating several sugar-refining companies and establishing large central refinery.

La., New Orleans—Building Specialties.—Hirsch-Doswell Manufacturing Co. Incorporated with \$50,000 capital stock by William Temple Doswell, Hans Hirsch and James Temple Doswell.

La., Plaquemine—Sugar Refinery.—Slack Bros. will erect sugar refinery.

La., Youngsville—Sugar.—Youngsville Cane Syrup Co., Dr. Roy O. Young, president, will erect addition to plant and install machinery; construction under supervision of company; machinery bids open; daily capacity 5000 tons of sugar. (See "Machinery Wanted.")

La., Roseland—Creamery.—Mayor Chapin, H. D. Wilson, C. A. Treboult and others are interested in incorporation of company with \$3000 capital stock to establish creamery.

Md., Baltimore—Banking Stationery, etc.—Falconer Company, 5-7 N. Gay St., lately noted as having purchased site at northwest corner Gay and Water Sts., is having plans prepared for erection of building; five stories; concrete fireproof; freight and passenger elevators; steam heating and electric lighting plant.

Md., Hagerstown—Paper Boxes, etc.—Cumberland Valley Paper Co., recently reported incorporated with \$5000 capital stock, has organized with C. P. Hench, president; B. M. Helm, vice-president-treasurer; John E. Frantz, secretary and general manager.

Md., Hagerstown—Paper Boxes.—Cumberland Valley Paper Box Co. (recently reported incorporated with \$5000 capital stock) will establish plant to manufacture paper boxes; building not to be erected at present; will install machinery; bids open; C. P. Hench, president; B. M. Helm, vice-president and treasurer; John E. Frantz, secretary and manager. (See "Machinery Wanted.")

Miss., Jackson—T. J. Holland & Co., Trenon, Tenn., plan erection of plant; character not reported.

Miss., Jackson—Ice Cream.—Hoadley Ice Cream Co., Memphis, Tenn., purchased half-acre tract for ice-cream and ice plant.

Mo., Kansas City—Brewery.—George Muehlebach Brewing Co. will erect addition to brewery on 8th St. near Main Ave.; 137x74 feet; two stories; cost \$25,000.

Mo., Kansas City—Boxes.—Inman Box Co. incorporated with \$30,000 capital stock by Samuel Inman, Frederick Inman and others.

Mo., St. Louis—Chip Baskets and Boxes.—St. Louis Basket & Box Co. will increase capital stock from \$80,000 to \$500,000; has plans for erection of additional plant at 2d and Arsenal Sts.

Mo., St. Louis—Butterine.—Blanton Company will establish plant for manufacturing butterine at 314 S. Second St.; 45x45 feet; eight stories; cost \$75,000; construction begun.

Mo., St. Louis—Extracts.—Warner Jenkins Manufacturing Co. has plans by E. Ross Chamblin, Holland Bldg., St. Louis, for erection of manufacturing plant at Baldwin and Montgomery Sts.

Mo., St. Louis—Bakery.—Jacob Slusky will establish bakery in North St. Louis; estimated cost \$200,000.

N. C., Asheville—Pianos.—W. T. Hill Piano Co. (recently reported incorporated with \$100,000 capital stock by W. T. Hill and others) will manufacture pianos and other musical instruments; will install woodworking machinery; will occupy erected building.

N. C., East Bend—Bags, etc.—East Bend

Manufacturing & Investment Co. Incorporated with \$25,000 capital stock by W. A. Martin and others to manufacture bags, shirts, etc.

N. C., Greensboro—Shoes.—Thompson & Son will install shoe manufacturing plant.

N. C., Rosemary—Drug.—Rosemary Drug Co. Incorporated with \$10,000 capital stock by S. B. Pierce and C. H. Irwin of Roanoke Rapids, N. C., and E. H. Elkins, Rosemary.

Okla., Altus—Automobiles.—Altus Motor Car Co. Incorporated with \$8000 capital stock by E. E. Milemeyer and B. G. Norris, both of Altus; Tom R. Moore and E. M. Cox, both of Orustee, Okla.

Okla., Enid—Bottling.—End Coca-Cola Bottling Co. Incorporated with \$2000 capital stock by C. L. Gaston, T. P. Nelson, Lillian Gaston and Joe Nelson.

Okla., Oklahoma City—Millwork and Fixtures.—Oklahoma Millwork & Fixture Co. Incorporated with \$10,000 capital stock by Henry D. Gothaner, Vincent Anderson and Lloyd Anderson.

S. C., Charleston—Paper and Box.—Charleston Paper & Box Co. Incorporated with \$10,000 capital stock by C. J. Miller, T. L. Reenstjerna and M. H. Sisson.

Tenn., Bristol—Overalls.—Head-Lipscomb-McCormick Company will operate established plant; capacity 50 dozens overalls daily; G. B. Head, president and manager; S. S. McCormick, vice-president; J. S. Lipscomb, secretary-treasurer. (Recently noted.)

Tenn., Nashville—Brewery.—William Gerst Brewing Co. will erect addition to plant on Seventh Ave. South; two stories; brick and iron; cost \$10,000.

Tenn., Somerville—Clothing.—Fayette Clothing Co. will double capital stock and capacity of plant.

Tex., Abilene—Candy and Cracker.—Texas Cracker & Candy Co. Incorporated with \$40,000 capital stock by Harry C. Stewart, C. A. Lanius and Ben L. Cox. (Company lately noted as contemplating establishment of factory.)

Tex., Amarillo—Furniture.—Kendrick Furniture Co. Incorporated with \$20,000 capital stock by J. B. Kendrick, J. O. Kendrick and Rollie H. Scales.

Tex., Quanah—Glove.—C. L. Odell and others will establish glove factory.

Tex., San Antonio—Aeroplane.—Automatic Equilibrium Airship Co. organized to manufacture aeroplane invented by Capt. A. F. W. McManus, U. S. A.

Tex., Sherman—Jewelry and Optical Company.—Sherman Jewelry & Optical Co. Incorporated with \$20,000 capital stock by Jules E. Murchert, Walter S. Dickerson and J. L. Woolford.

Tex., Sulphur Springs—Creamery.—W. G. Waiters, Paris, Tex., is interested in establishment of creamery.

Tex., West—Wine and Bitters.—Frenstast Wine & Bitter Co. Incorporated with \$12,000 capital stock by L. J. Sulak, F. M. Coeck and John E. Frantz, secretary and manager. (See "Machinery Wanted.")

Va., Farmville—Cigars.—Prince Edward Cigar Co., S. W. Watkins, president (recently reported incorporated), will operate plant with daily capacity of 1200 to 1500 cigars; F. E. Murchert, Walter S. Dickerson and J. L. Woolford.

Va., Key West.—City will vote April 12 on issuance of \$192,000 of bonds for street paving and other municipal improvements. Address The Mayor.

Va., Palatka.—Putnam county will construct 28 miles of hard-surfaced roads; bids to be opened March 5; S. Worden, clerk Board of Trustees for County Bonds, 722 Water St. (See "Machinery Wanted.")

Va., Tampa.—Bids will be opened March 1 for hard-surfacing four and a half miles of Ozona Rd., beginning at Moccasin Branch and extending to and connecting with Ozona and Dunedin Rds.; paving to be 12 feet wide; E. J. De Vane, chairman of board. (See "Machinery Wanted.")

Va., Tampa.—Hillsboro county will hard-surface one-half mile of road; bids to be opened March 1; E. J. De Vane, chairman of Hillsboro County Commissioners. (See "Machinery Wanted.")

Ark., Clarksville.—City authorized Mayor to award contracts for grading and building about three miles sidewalks; Chattahoochee brick or concrete; work to be completed by June 1; will receive bids until March 4; separate contract will be let for about one mile of new street, with considerable grading; J. H. Hicks, Mayor. (See "Machinery Wanted.")

Ky., Lexington.—City awarded contract to F. T. Justice & Co. of Lexington for construction of concrete sidewalks, curbing and guttering on Church, Main, North Limestone and 4th Sts., and to Hughes-Forman Company of Lexington for construction of concrete sidewalks, curbing and guttering on East Short St. and Columbia Ave.; F. T. Justice & Co.'s contract includes about 100,000 square feet of work, for which the company furnishes its own material; P. P. O'Neill, City Engineer, in charge.

Ky., Middlesboro.—City will pave Cumberland and Lothbury Aves., 19th and 20th Sts.; will probably use vitrified brick; also reported that City Council will authorize laying of sidewalks on 25th and 18th Sts. and Chester Ave. Address The Mayor.

La., Homer.—City is constructing two miles concrete sidewalks; G. G. Gill, clerk. (Road improvements recently noted.)

La., New Orleans.—Motor League of Louisiana will construct 15 miles earth road,

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

Ark., Little Rock—Chicago, Rock Island & Pacific Railway, J. B. Berry, chief engineer, Chicago, Ill., will soon begin construction of proposed Biddle shops; estimated cost \$150,000 to \$200,000.

ROAD AND STREET IMPROVEMENTS

Ala., Birmingham.—City will award contract to Jordan Constructing Co. of Birmingham to pave First Ave. with brick; cost about \$50,000.

Ala., Birmingham.—City awarded contract to Southern Bitulithic Co., Nashville, Tenn., for construction of 75,000 square yards bitulithic pavement.

Ala., Dothan.—City will construct 18,500 square yards of pavement; also 7000 linear feet of granite curbing; bids to be opened March 7; Joe Baker, Mayor. (See "Machinery Wanted.")

Ala., Mobile.—Board of Public Works awarded contract to Bigler Bros. at \$1.37 per square yard for laying cement pavement in First paving district that was formerly covered with asphalt; E. Koolman & Co. at 71 cents per square yard for cement walks in Washington Sq., and to McPherson & O'Gara at \$4089 for grading; Pat J. Lyons Park, contractor, of Mobile.

Ala., Montgomery.—City will pave roadway of Bibb St., portion of Lee St. and sidewalks on both sides of Lee St.; bids to be opened March 7; Robert Tait, City Treasurer. (See "Machinery Wanted.")

Ark., Jonesboro.—Board of Public Improvements decided to use vitrified brick on gravel foundation in paving district No. 4, including Union and Main Sts., and engaged C. Vogt, engineer, Decatur, Ind., to supervise work; will readvertise for bids at once. (Recently mentioned.)

Ark., Little Rock.—Board of Public Affairs awarded contract to Memphis (Tenn.) Asphalt & Paving Co. for paving one block on Markham St., between Main and Louisiana Sts.; will lay concrete foundation and resurface with asphalt.

Ark., Paragould.—Ben C. McGehee, engineer, Little Rock, Ark., made survey of streets to be paved, and estimates cost at \$18,000. (Recently mentioned.)

Ark., Pine Bluff.—Jefferson county will construct macadam road from Pine Bluff to Pulaski county line to meet road which is to be built from Little Rock by Pulaski county; James Gould, Jefferson County Judge.

D. C., Washington.—Washington-Alexandria Greater Highway Association has completed preliminary details for construction of proposed Washington-Alexandria road; C. H. Hoyt, engineer of office of public roads, Department of Agriculture, who has been in charge of surveying route, estimates cost at \$51,164; road to be 3.6 miles long, 30 feet between ditches with 20-foot roadway; macadam roadbed 11 inches thick, with tar or asphalt binding.

Fla., Key West.—City will vote April 12 on issuance of \$192,000 of bonds for street paving and other municipal improvements. Address The Mayor.

Fla., Palatka.—Putnam county will construct 28 miles of hard-surfaced roads; bids to be opened March 5; S. Worden, clerk Board of Trustees for County Bonds, 722 Water St. (See "Machinery Wanted.")

Fla., Tampa.—Bids will be opened March 1 for hard-surfacing four and a half miles of Ozona Rd., beginning at Moccasin Branch and extending to and connecting with Ozona and Dunedin Rds.; paving to be 12 feet wide; E. J. De Vane, chairman of board. (See "Machinery Wanted.")

Fla., Tampa.—Hillsboro county will hard-surface one-half mile of road; bids to be opened March 1; E. J. De Vane, chairman of Hillsboro County Commissioners. (See "Machinery Wanted.")

Ga., Clarksville.—City authorized Mayor to award contracts for grading and building about three miles sidewalks; Chattahoochee brick or concrete; work to be completed by June 1; will receive bids until March 4; separate contract will be let for about one mile of new street, with considerable grading; J. H. Hicks, Mayor. (See "Machinery Wanted.")

Ky., Lexington.—City awarded contract to F. T. Justice & Co. of Lexington for construction of concrete sidewalks, curbing and guttering on Church, Main, North Limestone and 4th Sts., and to Hughes-Forman Company of Lexington for construction of concrete sidewalks, curbing and guttering on East Short St. and Columbia Ave.; F. T. Justice & Co.'s contract includes about 100,000 square feet of work, for which the company furnishes its own material; P. P. O'Neill, City Engineer, in charge.

Ky., Middlesboro.—City will pave Cumberland and Lothbury Aves., 19th and 20th Sts.; will probably use vitrified brick; also reported that City Council will authorize laying of sidewalks on 25th and 18th Sts. and Chester Ave. Address The Mayor.

La., Homer.—City is constructing two miles concrete sidewalks; G. G. Gill, clerk. (Road improvements recently noted.)

La., New Orleans.—Motor League of Louisiana will construct 15 miles earth road,

prolonging Gentilly Ave. from Lafon Home to Chef Menteur, property owners donating 15 feet on either side, making a 60-foot road; ditches will be dug on each side, road crowned and graded, and galvanized iron culverts used for drainage purposes; work by convict labor; surveys by State Board of Engineers; construction under supervision of City Engineer.

La., Natchitoches.—City Council adopted ordinance providing for concrete paving of sidewalks on St. Denis St. Address The Mayor.

Md., Easton.—City contemplates issuing \$60,000 of bonds for asphalt paving of main streets; property-owners to pay one-quarter of cost, making total expenditure about \$75,000. Address The Mayor.

Mo., Kansas City.—City will vote in April on issuance of \$350,000 of bonds for west traffic way and \$50,000 for street-repair plant. Address The Mayor.

N. C., Ashboro.—Randolph county will vote March 15 on issuance of bonds for road improvements. Address County Commissioners.

N. C., Burlington.—City will vote May 3 on issuance of \$50,000 of bonds for additional street improvements. Address The Mayor.

N. C., Durham.—Durham county will macadamize three miles of Willardsville road; work to proceed not later than April 1; will also macadamize 10 blocks on Driven Ave. in East Durham. Address County Commissioners.

N. C., Randleman.—Randleman township will make road improvements; days' work: newly-appointed commissioners are Wm. H. Pickard and S. Bryant of Randleman, with J. E. Williamson of Worthville, N. C. (Fifty thousand dollar bond issue recently reported voted.)

Okla., Anadarko.—City awarded contract to J. F. Hill Company of Anadarko for \$60,000 yards of street paving.

Okla., Duston.—City will construct sidewalks; bids to be opened February 21; F. P. Hicks, Town Clerk. (See "Machinery, etc., Wanted.")

Okla., Norman.—City awarded contract to Parker-Washington Paving Co., St. Louis, Mo., at \$1.95 per square yard to pave Main St. with Ardmore rock asphalt.

Okla., Oklahoma City.—City will close bids March 7 on contract for sheet-asphalt pavement; 262,215 square yards; aggregate amount, \$86,000; length, 15.75 miles; this not including a double amount for boulevard streets with double driveway; W. C. Burke, City Engineer; street paving previously noted. (See "Machinery Wanted.")

Tenn., Chattanooga.—Boulevard Commission awarded contract to Noll Construction Co. of Chattanooga for grading on Rossville Ave. boulevard; about 70,000 cubic yards; paving contract to be let later; W. L. Dodd, County Engineer, in charge.

Tenn., Obion.—City will vote on issuance of \$10,000 of bonds for street improvements. Address The Mayor.

Tenn., Huntingdon.—City voted issuance of \$10,000 of bonds for improving streets and sidewalks and for extending electric lights and water mains to East End, suburb of city. (Recently mentioned.)

Tex., Denison.—City awarded contract for paving one block of Burnett Ave., from Main to Chestnut St., with vitrified brick. Address The Mayor.

Tex., Fort Worth.—City has entered into agreement with Texas & Pacific Railway for paving East Front St. Address The Mayor.

Tex., Fort Crockett, P. O. Galveston.—Bids will be opened March 7 for constructing storm sewer, roads and walks and water distributing system; Capt. H. Whitworth, Quartermaster, United States Army. (See "Machinery Wanted.")

Tex., Orange.—City will vote April 5 on issuance of \$15,000 of bonds for street improvements. Address The Mayor.

Tex., Waco.—City will pave 5th, 4th and Washington Sts. with vitrified brick and repair and pave portion of Franklin St. with either vitrified brick, bitulithic or bituminous macadam; bids opened February 15; James B. Baker, Mayor.

Va., Lynchburg.—H. I. Shaner, City Engineer, invites bids until February 22 for paving Cabell St. with vitrified brick; next work to be let will be paving of 9th, Commerce and 8th Sts.; following this, bids will be asked on paving of Main St.; all to be provided for out of \$40,000 bond issue previously mentioned. (See "Machinery, etc., Wanted.")

Va., Norton.—City will vote March 10 on issuance of \$35,000 of bonds for street im-

provements. Address The Mayor. (Lately noted.)

SEWER CONSTRUCTION

Ala., Montgomery.—City Council adopted resolution authorizing Mayor to enter into agreement with Western Railway of Alabama, C. A. Wickersham, general manager, Atlanta, Ga., for construction of concrete storm sewer across North Court St.; estimated cost \$10,000.

Fla., Madison.—City will construct sanitary-sewer system; bids to be opened March 16; R. H. Rowe, Mayor; H. S. Jaudon, P. O. Box 582, Savannah, Ga., is engineer. (See "Machinery Wanted.")

Fla., Milton.—City will vote on issuance of \$40,000 of bonds for construction of water-works, sewer system and electric-light plant. Address The Mayor.

Ga., Atlanta.—Sewer committee awarded following contracts for sewer work for 1910: Georgia Granite Co. for construction of sewers, exclusive of work to be done under proposed bond issue; Withers Foundry and Machine Works, for castings, for catch-basins, manhole coverings, etc.; Sciple Sons, for vitrified pipe for sewers and for cement; contractors of Atlanta.

Ky., Lexington.—City awarded contract to Thomas O'Day of Lexington to construct East Main St. sewer; length, 1600 feet.

Ky., Louisville.—City will open bids March 4 for construction of section "A," Castlewood sewer, contract No. 61; P. L. Atherton, chairman Sewer Commission, Equitable Bldg., Louisville. (See "Machinery Wanted.")

Ky., Mt. Sterling.—City will construct 9½ miles of sewers, varying in size from 6 to 24 inches in diameter; reinforced concrete septic tank; H. M. Ringo, City Clerk; Charles E. Collins, consulting engineer, Drexel Bldg., Philadelphia, Pa. (See "Machinery Wanted.")

Ky., Cumberland.—City will vote on issuance of \$65,000 of bonds for construction of sewer system. Address The Mayor.

Mo., Kansas City.—City will vote in April on issuance of \$100,000 of bonds for sewer construction. Address The Mayor.

Mo., Vandalia.—City will construct sewer system, consisting of vitrified sewer pipe, manholes and antiseptic tank; bids to be opened February 24; plans by Fuller & Colton, Chemical Bldg., St. Louis, Mo.; J. O. Barrow, City Clerk. (Recently reported as having voted \$25,000 bond issue for sewer system and water-works.)

N. C., Brevard.—City contemplates extension of sewer system; will expend \$15,000 on improvements to sewer system and water-works; W. E. Breeze, Jr., Mayor. (See "Water-works.")

N. C., Sanford.—City voted \$25,000 bond issue for construction of sewer system; surveys will be made by J. C. White, Durham, N. C., engineer in charge.

S. C., Clinton.—City has engaged J. B. McCrary & Co., Atlanta, Ga., to prepare plans for sewer system.

Tex., Fort Crockett, P. O. Galveston.—Bids will be opened March 7 for constructing storm sewer, roads and walks and water distributing system; Capt. H. Whitworth, Quartermaster, United States Army. (See "Machinery Wanted.")

Tex., Fort Worth.—City has entered into agreement for construction of storm-water drain from Jones to Boaz St. Address The Mayor.

Tex., Spur.—John B. Hawley, engineer, Fort Worth, Tex., is making surveys for construction of sewer system.

Va., Norton.—City will vote March 10 on issuance of \$20,000 of bonds for construction of sewer system. Address The Mayor. (Lately mentioned.)

Va., Norfolk.—F. J. McGuire of Norfolk is lowest bidder at \$12,570 for construction of sewers, manholes, flush tanks and outlets in Sixth ward. W. T. Brooke, City Engineer.

Ala., Cuba.—Oxford Telephone Club, recently organized to construct nine-mile telephone system, will install electrical machinery for 14 miles of telephone line and eight phones; J. L. Swain, president; R. N. Wilder, secretary-treasurer.

Md., Denton.—Farmers & Merchants' Telephone Co. has increased capital stock from \$25,000 to \$50,000.

N. C., Canton.—Canton Electric & Telegraph Co. incorporated with \$100,000 capital stock by G. H. Henson, J. N. Mease and R. H. Sorrells.

N. C., Salisbury.—Rowan County Commissioners have granted franchises to Gold Hill Telephone Co., Gold Hill, N. C., and Eben-

eser Telephone Co., Salisbury, for operation of telephone exchanges.

N. C., Wilkesboro.—Lewis Fork Telephone Co., Congo, N. C., recently reported organized to construct telephone system from North Wilkesboro to Stony Fork, has elected A. P. Hall president, C. R. Trippel vice-president, W. H. Foster secretary and treasurer; line to be constructed co-operatively. (See "Machinery Wanted.")

Tenn., Memphis.—Benjamin Glaser, Philadelphia, Pa., contemplates organizing company to establish wireless telephone system and wireless telephone manufacturing plant.

Tex., Floresville.—Floresville Rural Telephone Co. incorporated with \$6000 capital stock by J. W. Wood, W. A. Scott and S. K. Franklin.

TEXTILE MILLS

N. C., Chapel Hill—Cotton Yarns.—T. F. Lloyd Manufacturing Co. incorporated with capital stock of \$200,000 by T. F. Lloyd, Isaac Pritchard, W. S. Robinson and L. O. Lloyd.

N. C., Lumberton—Jennings Cotton Mills (reported incorporated in December with \$500,000 capital stock by H. B. Jennings and others) will soon organize and determine details of plant.

N. C., Newell.—A. C. Hutchison of Charlotte, N. C., is interested in plan to build cotton mill; electrical drive.

N. C., Flat Rock—Hosery, Finishing, etc.—Skyland Hoosier Co. will erect building to replace burned structure, as reported lately; brick construction; with equipment, will cost \$16,000; daily capacity, 1500 dozen pairs whole and half-hose; dyeing and finishing machinery contract let to Philadelphia Drying Machinery Co., Philadelphia, Pa.; is also installing 80 new additional hoosier machines; main office at Tryon, N. C.

N. C., Burlington—Hosery.—Whithead Hoosier Mills will build addition and install machinery to double capacity; present equipment, 50 machines, etc., driven by gas power; understood to have contracted for additions.

N. C., Wadesboro—Cotton Yarns.—Wadesboro Cotton Mills Co. plans installation of looms to weave output of its 10,896 ring spindles.

N. C., Washington—Knit Goods.—Chamber of Commerce is negotiating with Philadelphia (Pa.) manufacturers relative to establishing knit-goods mill.

N. C., Winston-Salem—Print Cloth.—Inverness Mills Co. (lately reported organized with \$200,000 capital stock, etc.) engaged C. R. Makepeace & Co., Providence, R. I., as architect in charge; will erect two-story 75x300-foot brick building, first floor concrete base, to cost \$25,000; install 800 spindles, 200 looms; probably superheated steam-power equipment, etc., at cost of \$165,000; award building contracts about March 15; machinery contracts already awarded; Lawrence McRae, treasurer.

WATER-WORKS

Ala., Boaz.—City contemplates expenditure of \$25,000 on construction of water-works recently noted under consideration; probable capacity, 60,000 to 75,000 gallons; steel stand-pipe; 30x80-foot building; engineer not employed; date of opening bids not set; W. H. Bartlett, Mayor. (See "Machinery Wanted.")

Ala., Fort Morgan.—Bids will be opened March 7 for construction of three reinforced concrete cisterns, one 30,000 gallons and two 8500 gallons capacity. Capt. H. B. Chamberlin, Quartermaster United States Army, is constructing quartermaster. (See "Machinery Wanted.")

Ala., Roanoke.—City contemplates installing motor-driven centrifugal pumps and filtering plant; W. Oscar Orr, superintendent Municipal Electric Light and Water-works.

Ala., Montgomery.—City purchased site for \$15,250 on which to construct reservoir and pumping station; pump to have capacity of 2,500,000 gallons; bids for construction of reservoir with cover will be opened in March; reservoir capacity, 3,000,000 gallons; A. R. Gichrist, City Engineer; Gaston Hunter, Mayor. (Recently mentioned. See "Machinery Wanted.")

Fla., Live Oak.—City awarded contract to O. E. Hughes & Co. of Live Oak to drill well for increasing water supply. Address The Mayor.

Fla., Milton.—City will vote on issuance of \$40,000 of bonds for construction of water-works, sewer system and electric-light plant. Address The Mayor.

Ga., Savannah.—Water Committee authorized its superintendent to advertise for bids on boiler estimated to cost \$2300 at river pumping station and 1400 valves for pumps

at new station; also requested City Council to appropriate \$5000 for extension of mains.

Ga., Shellman.—City will vote February 21 on \$8000 issue of bonds for water-works improvements recently noted contemplated; to include air-lift fire pump, 100,000-gallon concrete reservoir and laying of 4500 feet four-inch cast-iron main; C. P. Payne, superintendent water-works.

Ky., Louisville.—Louisville Water Co. instructed its chief engineer, Theodore A. Leisen, 459 3d St., to prepare plans and estimates for improvements to water-works; these will include 30,000,000-gallon vertical steam turbine-driven centrifugal pump at river station No. 1, with remodeling of station; concrete and stone intake crib and tower with screen chambers for supply in both stations Nos. 1 and 2; cleaning Crescent Hill reservoir; cementing and grouting bottom and slopes of north reservoir and construction of tower and improvements to conduit between reservoirs; stable and improvements to structures at 3d St.; Improved coal-storing facilities at Crescent Hill pumping station, etc. (Recently mentioned.)

Ky., Owensboro.—City contemplates voting on issuance of \$30,000 of bonds for improvements to water-works, including water-softening plant. Address The Mayor.

Ky., Alexandria.—City awarded contract to Clifford Well Co., Texarkana, Ark., to drill artesian well to increase water supply; pumping capacity of 300,000 gallons by use of centrifugal or duplex pump; cost \$3252 for drilling to depth of 600 feet; \$4878 to depth of 900 feet, and \$5675 to depth of 1000 feet.

Ky., De Ridder.—De Ridder Water-Works Co. incorporated with \$10,000 capital stock; Fred Johnson, president; C. C. Davis, vice-president; J. F. Love, secretary; W. R. Jones, treasurer.

Ky., Lafayette.—City will extend water and light systems; City Council appropriated \$1500. Address The Mayor.

Ky., Rising Sun.—City is considering construction of water-works. Address The Mayor.

Miss., Jackson.—City purchased three-acre tract for artesian water plant; Hamilton Johnson, manager of water-works. (Bond issue of \$55,000 for water-works improvements recently noted.)

Miss., Lyon.—City will issue \$5000 water-works bonds. Address The Mayor.

Miss., Vicksburg.—City will lay water mains on Cherry, Harris, Drummond and Walnut Sts.; bids to be opened March 7; J. J. Hayes, Mayor. (See "Machinery Wanted.")

Mo., Kansas City.—City will vote in April on issuance of \$1,000,000 water-works bonds. Address The Mayor.

Mo., Vandalia.—City will open bids February 24 for construction of water-works; will consist of cast-iron pipes, valves and hydrants, steel tower and tank, deep-well pumping apparatus; plans by Fuller & Colton, Chemical Bldg., St. Louis, Mo.; J. O. Barrow, City Clerk. (Recently mentioned as having voted \$25,000 bond issue for water-works and sewer system.)

N. C., Brevard.—City issued \$15,000 of bonds for water-works and sewerage; contemplates purchase of watershed at cost of \$2500; will expend balance of amount in construction of additional reservoir and extension of water and sewer lines; W. E. Breeze, Jr., Mayor.

N. C., Hendersonville.—Town Council made appropriation to pipe water from springs to reservoir. Address The Mayor.

N. C., Jonesboro.—City voted \$20,000 bond issue for construction of water-works. Address The Mayor.

N. C., Spencer.—City purchased Spencer Water Co.'s plant at \$43,000. Address The Mayor.

Okla., Hollis.—City contemplates installation of water-works. Address M. W. Prock, secretary Commercial Club. (See "Machinery Wanted.")

Okla., Tulsa.—City will vote on issuance of \$305,000 of bonds for municipal improvements, including \$120,000 for improvement of water-works and \$100,000 for city hall. Address The Mayor.

Tenn., Huntingdon.—City voted issuance of \$10,000 of bonds to extend water mains to East End, etc.; recently noted. Address The Mayor. (See "Road and Street Improvements.")

Tenn., Newport.—City contemplates voting on issuance of \$50,000 of bonds for construction of water-works. Address The Mayor.

Tex., Ballinger.—City awarded contract for \$4000 water-filtering system. Address The Mayor.

Tex., Childress.—City will construct pumping station at Lake Childress and lay 12,000

feet of 8-inch cast-iron water main to be used as pump line; expenditure, \$15,000. Address The Mayor.

Tex., Corpus Christi.—City purchased water-works for \$35,000; remainder of \$90,000 bond issue will be expended in improvements and extensions. (J. W. Maxey & Co., Houston, Tex., previously reported as engineer.)

Tex., Lufkin.—City contemplates laying 1½ miles of 6-inch mains; estimated cost, \$4000. Address The Mayor.

Tex., Fort Crockett, P. O. Galveston.—Bids will be opened March 7 for constructing water distributing system, roads and walks and storm sewers; Capt. H. Whitworth, Quarter master, United States Army. (See "Machinery Wanted.")

Tex., Floresville.—City will extend water-works; drill well, install boiler and double capacity of pumping equipment. Address The Mayor.

Tex., Jacksboro.—City has consulted with N. Werenkskold, civil engineer, Dallas, Tex., regarding preliminary work of constructing water-works system, and awarded contract to J. W. Burns of Jacksboro to drill necessary wells; two 8-inch wells to be bored at once.

Tex., Milford.—East Side Water Co. organized with W. W. Darrow president, W. H. Parker secretary and J. E. Davis treasurer.

Tex., Quanah.—Fountain & Shaw, Houston, Tex., submitted report to City Council on construction of water-works; plan contemplates dam across Groesbeck Creek and piping water to city; estimated cost, \$40,000 to \$60,000.

Va., Norfolk.—Board of Control will open bids February 23 for work in connection with erection of pumping station on Colley Ave.; bids to be separately for several sections of work; plans on file in office of W. T. Brooke, City Engineer.

WOODWORKING PLANTS

Fla., Sanford—Barrels.—Henry H. Deane, Norfolk, Va., will, it is reported, establish barrel factory.

Fla., Tampa—Refrigerators, Woodenware, etc.—Dillingham Manufacturing Co., Sheboygan, Wis., will, it is reported, establish plant at Tampa for manufacturing refrigerators, woodenware and furniture.

Fla., Columbus—Sash, Doors, etc.—Musco-gee Lumber Co. organized; will manufacture sash, doors, blinds and building material. (See "Lumber Manufacturing Plants.")

La., New Orleans—Furniture.—Beauregard Furniture Co., Ltd., incorporated with \$50,000 capital stock; Natale Maestri, president; Walter Maestri, vice president; Richard Maestri, secretary; Caesar Maestri, treasurer.

Md., Baltimore—Mill Work, etc.—Enterprise Mill & Lumber Co. incorporated with \$5000 capital stock to manufacture mill work, sash, doors, blinds, mantels, refrigerators, etc.; purchased four-story warehouse 1409-11-13 East Monument St.; Martin Welsman, president and manager; Nahum Adler, secretary-treasurer.

Miss., Forest—Spokes.—Scott Spoke Co. incorporated with \$10,000 capital stock by Geo. A. Dibble, J. H. Miller and others.

Miss., Jackson—Furniture.—Sears, Roebuck & Co., Chicago, Ill., is reported as seeking site for plant, probably to manufacture furniture.

Miss., Jackson—Cooperage.—Chess & Wy-mond Company, Eugene Graham, manager, Louisville, Ky. (or Jackson), purchased 25-acre tract for heading and cooperage plant.

Miss., Jackson—Spokes.—Terrell & Yarbro Company purchased (through H. L. & C. W. Hicks) five-acre tract for spoke and rim factory. (Plant recently incorrectly noted to be promoted by "Hicks Bros.")

Miss., Natchez.—C. J. Hay, 1206 Hilburna Bank Bldg., New Orleans, La., contemplates erection of stave mill.

Miss., Tyler—Pickets, Cabinet Work, etc.—C. H. Stevens will establish plant to manufacture dressed lumber, pickets and cabinet work; will erect \$2000 building and install woodworking machinery at cost of \$10,000. (See "Machinery Wanted.")

N. C., Burlington—Mantels.—George W. Anthony Company will erect addition to plant for manufacturing mantels.

N. C., Charlotte—Boxes, Shingles, etc.—North Carolina Lumber Co. incorporated with \$250,000 capital stock by George W. Lake, C. O. Beers, F. B. Gault; purchased 40,000 acres of timber land in Columbus county, and will establish plant for manufacturing shingles, crossties, boxes and barrels. (Lately mentioned.)

N. C., Hertford—Coffins.—W. H. Ward will erect coffin factory.

S. C., Blackville—Poles, etc.—Manhattan Tie & Timber Co., W. H. Felder, president and manager, incorporated with \$100,000 capital stock to manufacture crossties, poles, etc. (See "Lumber-manufacturing Plants.")

S. C., Greenville—Plows.—Light Draft Plow Co. incorporated with \$9000 capital stock.

Tenn., Jellico—Stave.—Welch Stave & Head-ing Co., Monterey, Tenn., will, it is reported, establish stave factory.

Tenn., Memphis—Hardwood Flooring.—Memphis Hardwood Flooring Co. has increased capital stock from \$100,000 to \$200,000.

Tenn., Lufkin—Wagons.—Martin Wagon Co. incorporated with \$8000 by D. W. Martin, E. R. Martin and B. L. Zeagler.

Tenn., Paris—Furniture.—Baker Furniture Co. incorporated with \$10,000 capital stock by R. R. Baker, R. H. Baker and F. R. Baker.

BURNED

Ala., Selma.—O. M. Cawthon's residence at Lapsley and 2d Sts.; loss \$25,000.

Ark., Helena.—Solomon Moore Land Co.'s ginning plant; loss \$12,000.

Ark., Hot Springs.—Pine Bluff & Western Railroad's machine shop, paint-house, etc.; loss \$50,000; S. E. Dillon, superintendent, Hot Springs, Ark.

Ark., Little Rock.—Minnequa Cooperage Co.'s plant; loss \$75,000.

Ark., Little Rock.—Colorado Fuel & Iron Co.'s cooperage plant; loss \$75,000.

Ark., Prineville.—C. & W. Kramer Company's sawmill.

D. C., Washington.—Woodley Inn; loss \$40,000; Margaret F. Munday, proprietor.

Fla., Sarasota.—Bayview Hotel.

Ky., Arat.—Allen & Lewis' saw and grist mills; loss \$2500.

La., New Iberia.—Joel Fisher's stable; loss \$3000.

Md., Crisfield.—Baltimore, Chesapeake & Atlantic Railway's wharf and warehouse; A. C. Shand, chief engineer, Broad Street Station, Philadelphia, Pa.

Md., Baltimore.—Charles J. Bonaparte's stable and wagon shed at Mont Alto; loss \$5000; address, 216 St. Paul St., Baltimore.

Miss., Fernwood.—Methodist Church, loss \$4000; Rev. D. Yarborough, pastor.

Miss., Vicksburg.—Buildings occupied by Kuhn Bros. and Valley Dry Goods Co.; loss \$3000.

Mo., St. Louis.—G. W. Miller Wallpaper Co.'s plant; loss \$100,000.

N. C., Charlotte.—Southern Real Estate, Loan & Trust Co.'s building; loss \$75,000.

N. C., Madison.—Hotel Madison; loss \$15,000; J. B. Webster, proprietor.

N. C., Nantahala.—Silver Birch Lodge, owned by R. L. Porter, Franklin, N. C.; loss \$20,000.

N. C., Washington.—Woodley Inn; loss \$18,000.

S. C., Allendale.—Allendale Cottonseed Oil Mill's warehouse; loss \$25,000.

S. C., Bowman.—Methodist Church, loss \$4500. Address The Pastor, Methodist Church.

S. C., Greenville.—Virginia-Carolina Chemical Co.'s plant, main office, Richmond, Va., loss \$30,000; Percy Beatty's residence, loss \$15,000.

S. C., Lumber.—William & McKeithan Lumber Co.'s plant; loss \$25,000.

S. C., Walterboro.—Bethlehem Baptist Church, loss \$2000; Rev. George A. Martin, pastor.

Tenn., Harms.—Pitts & Strong's flour mill; loss \$20,000.

Tenn., Nashville.—Arrington Street Cum-berland Presbyterian Church building; loss \$4000; Rev. F. F. Lovett, 319 Arrington St., pastor.

Tenn., Troy.—Bank of Troy; loss \$10,000.

Tenn., Memphis.—St. Francis Rod & Gun Club's house; loss \$8000.

Tex., Belton.—A. D. Potts' residence; loss \$4000.

Tex., McKinney.—D. T. Pardue's dwelling; loss \$6000.

Va., Charlottesville.—University of Vir-ginia's chapel; estimated loss \$3000.

Va., Toms Creek (not a postoffice).—Vir-ginia Iron, Coal & Coke Co.'s store, loss \$100,000; main office, Bristol, Va. Tenn.

Va., Staunton.—C. H. Cohron & Son's warehouse; loss \$12,000.

W. Va., Ronceverte.—Ronceverte Hotel, loss \$15,000; William Felix, manager.

W. Va., Wheeling.—Peter Bachman's store; loss \$6000.

BUILDING NOTES

APARTMENT-HOUSES

Ky., Louisville.—Owens Realty Co. will erect apartment-house at 6th and Hill Sts.; three stories; 18 apartments; estimated cost \$60,000; L. Keller & Son, contractors and architects, prepared plans.

Ky., Louisville.—W. M. Reeser will erect apartment-house; six flats of seven rooms each; cost \$25,000; site 70x110 feet.

Mo., St. Louis.—F. A. Banister, Syndicate Trust Bldg., has plans for apartment-house at Clemens Ave. and Cabanne Way; six apartments of six rooms each; cost \$30,000; site 60x185 feet.

Mo., St. Louis.—Mrs. Mary McInerney purchased site, 30x142 feet, on which to erect apartment-house.

Mo., St. Louis.—Julius Weil is having plans prepared by J. M. Herschstein, Columbia Bldg., St. Louis, for apartment-house at 1015 North 10th St.

Tenn., Memphis.—Thomas B. Collier will erect three-story building; first floor for store and upper floors for apartments.

Tenn., Chattanooga.—J. P. McMillin, Jackson, Tenn., awarded contract through Huntington & Sear, architects, James Bldg., Chattanooga, to D. F. Brandon, 807 Georgia Ave., Chattanooga, for erection of \$13,000 apartment-house previously described; brick two-story-and-basement structure; composition roof; 74x100 feet, including porches; eight apartments; 40 rooms; plumbing and electric light contracts let.

Tenn., Memphis.—Mrs. Rosa Vendig will remodel apartment-house at cost of \$5000; plans by John Galsford of Memphis, at whose office bids will be opened.

W. Va., Martinsburg.—Bowers, Walker & Bowers Company incorporated with S. W. Walker, president; George M. Bowers, vice-president, and George M. Bowers, secretary-treasurer; will erect apartment-house, as recently stated; six stories; 50x120 feet; steel and brick; fireproof; cost \$75,000.

W. Va., Wheeling.—J. E. Rudge will erect apartment-house; pressed brick; four apartments, each composed of four rooms, pantry, bath and hall; laundry in basement, separately divided for each tenant; Albert F. Dayton of Wheeling is preparing plans.

Ky., Arat.—Allen & Lewis' saw and grist mills; loss \$2500.

W. Va., Martinsburg.—People's Trust Co. is having plans prepared for bank building; eight stories; brick; stone front.

W. Va., Montgomery.—Joseph Hill, cashier of National City Bank, and associates will remodel Montgomery National Bank building for banking purposes.

BANK AND OFFICE BUILDINGS

Ark., Parkdale.—R. G. Williams had plans prepared by and awarded contract to E. B. Ragan, Parkdale, for erection of brick bank and office building; size 24x80 feet; cost \$2800.

D. C., Washington.—Charles J. Cassidy Company, Charles J. Cassidy, president, 523 13th St. N. W., Washington (contractor for erection of proposed Barrister office building at 625 F St. N. W.), has begun foundation work; structure will be fireproof; 29x120 feet; front of first story of marble; brick with terra-cotta trimmings above; offices, single and in suites of from two to six rooms; two electric elevators; plans by Appleton P. Clark, Jr., 605 F St. N. W., Washington.

Fla., Coleman.—Sumter Banking Co., D. W. Swicord, president, will erect concrete bank building.

Fla., Tampa.—George A. Petteway and associates will erect 10-story fireproof brick and stone building for bank, mercantile and office purposes.

Ga., Rome.—J. B. Sullivan, Jr., will not at present erect store and office building recently noted.

Ga., Savannah.—Savannah Bank & Trust Co., William F. McCauley, president, purchased site 60x90 feet for \$55,000 on which to erect bank and office building; eight stories; steel frame; exterior of Georgia marble; estimated cost, \$250,000.

Md., Baltimore.—Isaac E. Emerson, 2500 Eutaw Pl., is having plans prepared by Joseph Evans Sperry, 409 Calvert Bldg., Baltimore, for proposed office building to be erected on Lombard near Eutaw St.; will be equipped for both office and manufacturing purposes.

Mo., St. Louis.—Corner Realty Co., 721 Locust St., awarded contract to Westlake Construction Co., Mercantile Bldg., St. Louis, to

erect office and theater building. (See Theatres.)

Mo., St. Louis.—Paul Blakewell, Jr., will expend \$10,000 in providing new entrance to Fullerton Building.

N. C., Durham.—City National Bank contemplates erection of bank and office building.

Okla., Oklahoma City.—Zahn-Swan Company will erect 10-story structure; size 75x190 feet; steel and concrete fireproof construction; architect not selected. (See "Machinery Wanted.")

Tex., Amarillo.—Bids will be received by directors Amarillo National Bank until February 24; plans, etc., may be obtained at Amarillo National Bank or at office of E. Wallington, architect, Chansler Bldg., Amarillo; certified check, \$500; separate bids will be taken on heating, plumbing, painting and electrical work; form of proposals attached to specifications.

Tex., Kingsville.—Robert J. Kleberg & Co. awarded contract for erection of bank building; fireproof; 50x100 feet; electric lighting; cost about \$30,000; plans by C. D. Hill & Co., Dallas and Houston, Tex. (Recently mentioned.)

Tex., Paducah.—O. L. Thomas, cashier Paducah State Bank, will open bids February 24 for erection of two-story brick bank building for Paducah State Bank; plans, etc., may be obtained at bank or office of R. H. Stuckey, Chillicothe, Tex.; certified check, \$500.

Tex., Quanah.—L. Simpson will expend \$15,000 to erect bank and office building recently noted; 25x115 feet; ordinary construction; electric lighting; heating not decided; plans and construction by owner.

Va., Richmond.—Broad Street Bank, W. M. Hablison, president, 530 E. Broad St., will erect bank building.

Tex., Trumbull.—Trumbull State Bank, C. A. Weatherford, president, will erect brick bank building.

W. Va., Martinsburg.—People's Trust Co. is having plans prepared for bank building; eight stories; brick; stone front.

W. Va., Montgomery.—Joseph Hill, cashier of National City Bank, and associates will remodel Montgomery National Bank building for banking purposes.

CHURCHES

Ala., Birmingham.—Temple Emmanuel will authorize building committee to secure \$50,000 with which to begin work on temple; proposed to erect Sunday-school building first and lay foundations for temple proper; estimated completed cost, \$65,000. Address The Rabbi, Temple Emmanuel. (Previously mentioned.)

Ala., Birmingham.—Twenty-seventh Street Baptist Church will erect addition to edifice to be used as meeting place for Philalethes and Baracca societies; Joseph Dickson, president of latter.

Ala., Birmingham.—Bids will be received by D. H. Marbury, chairman building committee, until March 1 for erecting church building for Southside Baptist Congregation; for plans and specifications apply to J. I. Blount, Birmingham, or to R. H. Hunts, architect, Chattanooga, Tenn.; bids will be received on work as whole and also on different subdivisions. (Previously mentioned.)

Ala., Foley.—Catholic Church awarded contract to J. P. Greenwood, Montgomery, Ala., for erection of edifice.

Ala., Montgomery.—F. M. Kohn & Son, 16 Commerce St., for Rt. Rev. Edward P. Allen, Bishop of Mobile, Ala., will receive bids until February 23 for erection of St. Andrew's Catholic Church according to plans and specifications on file in above office.

Ala., Montgomery.—Perry Street Methodist Church, Rev. W. M. Curtis, pastor, will erect edifice to cost \$25,000; A. C. Davis, chairman building committee.

D. C., Washington.—Metropolitan Baptist Church will expend \$50,000 to erect edifice; A. P. Clark, Jr., 605 F St. N. W., Washington, recently noted as preparing plans; 80x105 feet; semi-fireproof construction; direct steam heat.

Fla., Pensacola.—Tolbert Chapel will have plans prepared by Hopkins & Willis of Pensacola for remodeling or rebuilding edifice.

Ga., Dublin.—Methodist Church approved plans by T. F. Lockwood, Columbus, Ga., for remodeling edifice; Sunday-school in rear; cost \$17,000.

Ga., Milledgeville.—Methodist Church will

have plans prepared by Curran Ellis, Macon, Ga., for edifice to cost \$30,000. (Recently mentioned.)

Ga., Sparta.—First Methodist Church, Rev. G. M. Eakes, pastor, will rebuild edifice recently burned; brick; furnace or steam heat; plans indefinite.

Ia., Jennings.—Catholic Church, Rev. Father Peters, pastor, resumed erection of proposed edifice; concrete blocks; 60x139 feet; cost \$25,000.

Ia., Kentwood.—Baptist Church awarded contract to James Davis of Kentwood to remodel and enlarge edifice; cost \$3000.

Ia., Plaquemine.—Bethel African Methodist Episcopal congregation will erect edifice. Address The Pastor, Bethel African Methodist Episcopal Church.

Ia., Independence.—Catholic Church awarded contract to Mr. Smalley of Independence to erect edifice; 35x85 feet; cost \$3000.

Ia., Slidell.—Slidell Baptist Church will open bids March 9 for erection of edifice; proposal sheets and specifications furnished on application to trustees of congregation or to Dr. J. F. Polk.

Md., Hyattsville.—Hyattsville Presbyterian Church, Rev. James Kelly Argo, pastor, will erect edifice to cost \$15,000; will contain Sunday-school room, gymnasium, etc.; reported that Gordon Early MacNeil of Hyattsville will prepare plans.

Mo., Centralia.—Christian congregation will erect edifice. Address The Pastor, Christian Church.

Miss., Saltillo.—Methodist Church, Rev. O. L. Savage, pastor, will erect brick edifice.

Miss., Long Beach.—Presbyterian congregation contemplates erecting edifice. Address The Pastor, Presbyterian Church.

Mo., Centralia.—Methodist Episcopal Church South will erect edifice. Address The Pastor, Methodist Episcopal Church South.

Mo., Joplin.—Evangelical Lutheran Emmanuel congregation, Rev. Louis Seidel, pastor, contemplates erecting stone edifice to cost \$25,000.

Mo., St. Louis County.—German Lutheran Church has plans by Foell Building Co., 3347 California Ave., St. Louis, for edifice to cost \$5000.

N. C., Raleigh.—Edenton Street Methodist Episcopal Congregation decided upon plan for Sunday-school building; two stories and basement; seating capacity, 1150; cost \$25,000. Address The Pastor, Edenton Street Methodist Episcopal Church.

S. C., Clinton.—St. Barnabas' Episcopal Congregation will erect edifice. Address The Pastor, St. Barnabas' Episcopal Church.

Okla., Tulsa.—First Presbyterian Church will open bids February 28 for erection of edifice; 100x140 feet; basement; foundation of concrete and veneered with Bedford stone; main superstructure of brick, with Bedford stone trimmings; auditorium and Sunday-school to have total seating capacity of 1250; estimated cost \$40,000; plans by Waller, Shaw & Fields, Fort Worth, Tex. (Further facts previously mentioned.)

S. C., Walterboro.—Bethlehem Baptist Church, Rev. George A. Martin, pastor, will rebuild edifice reported burned.

Tenn., Bristol.—Methodist Episcopal Church, Rev. C. Thomas Coombs, pastor, contemplates erecting edifice to cost \$20,000; may not build for 18 months.

Tenn., Chattanooga.—Third (or Oak Street) Presbyterian Church, J. Hardin Smith, pastor, will proceed with erection of stone or brick edifice recently noted; cost \$40,000; plans not completed. E. M. Shelton, chairman building committee; structure will be 55x30 feet; bids to be opened in few days.

Tenn., Cleveland.—Methodist Episcopal Church will erect \$20,000 edifice; W. L. Humphrey, chairman building committee.

Tenn., Chattanooga.—South Side Baptist Church, D. H. Marbury, chairman of committee, will receive bids until March 1 for erection of edifice previously described; steam heat; electric and gas lighting; cost \$60,000; plans by R. H. Hunt, James Bldg., Chattanooga.

Tenn., Memphis.—La Belle Place Baptist Church, Rev. J. W. Gillon, pastor, has plans by John Galsford of Memphis for remodeling edifice.

Tenn., Sparta.—Methodist Episcopal congregation is having plans prepared for edifice to cost \$19,000. Address The Pastor, Methodist Episcopal Church.

Tex., Abilene.—Pecan Street Methodist Church, Rev. R. O. Bailey, pastor, will erect proposed edifice.

Tex., Angleton.—Methodist church award-

ed contract to Texas Brick & Concrete Construction Co., Temple and Angleton, Tex., for erection of edifice; 44.10x70.10 feet; semi-fireproof construction; cost \$5000; plans by C. D. Mills & Co., Dallas and Houston, Tex. (Recently incorrectly noted to have awarded contract to Smith & Wenz, Temple, Tex.)

Tex., Fort Worth.—First Christian congregation contemplates erecting edifice. Address The Pastor, First Christian Church.

Tex., Fort Worth.—First Baptist Congregation purchased site 100x100 feet, on which to erect edifice. Address The Pastor, First Baptist Church.

Tex., Harlingen.—Methodist congregation will erect edifice to cost \$3500. Rev. J. E. Pyle of San Benito and Mercedes, Tex., will be pastor.

Tex., Harlingen.—Presbyterian Church will erect edifice to cost \$1500. Rev. Mr. Doggett, San Antonio, Tex., will be pastor.

Tex., Palacios.—Presbyterian Congregation will erect cement-block edifice, to cost \$5000. Address The Pastor, Presbyterian Church.

Tex., San Antonio.—Southwest Texas Land Co., W. L. Quinn, president, contemplates erection of church.

Va., Alexandria.—Second Presbyterian congregation adopted plans for remodeling edifice at cost of \$15,000. Address The Pastor, Second Presbyterian Church.

Va., Portsmouth.—Cottage Place Methodist Episcopal Church, Rev. S. Otto Wright, pastor, is having plans prepared by Edward Overman of Portsmouth for edifice; frontage 90 feet; brick; cost \$10,000.

Va., South Norfolk.—Church of Christ (Disciples) contemplates erecting edifice. Address The Pastor, Church of Christ (Disciples).

COURTHOUSES

N. C., Rockingham.—Richmond County Commissioners instructed County Clerk to confer with architects and secure plans and specifications for courthouse and jail.

S. C., Seneca.—Chamber of Commerce and citizens have fund of \$25,000 for construction of courthouse and jail to be erected if county votes affirmatively on proposed change of county seat to Seneca. Address County Commissioners.

Tex., Georgetown.—Williamson county engaged C. H. Page & Bro., Austin, Tex., to prepare plans for \$100,000 steel, brick and concrete courthouse; three stories. (Bond issue recently noted.)

DWELLINGS

D. C., Washington.—Dr. Virginius Dabney, 1623 Connecticut Ave., awarded contract to J. H. Nolan, 1413 G St. N. W., Washington, for erection of dwelling recently mentioned; four stories and English basement; 20x42 feet; ordinary construction; hot-water heat; electric lighting; cost \$13,000; plans by Wood, Dunn & Deering, 808 17th St. N. W., Washington.

D. C., Washington.—H. Wardman, 1333 G St. N. W., has plans by A. H. Beers, 1333 G St. N. W., for erection of eight dwellings on 14th St. N. W.; three stories; brick; cost \$25,000.

D. C., Washington.—L. J. Mangan, 1619 L St. N. W., awarded contract to W. B. Gibbs, 12 Hanover Pl. N. W., Washington, for erection of six dwellings on Morse St. N. E.; two stories; brick; cost \$12,000; plans by Julius Wenig, 1323 F St. N. W., Washington.

D. C., Washington.—H. R. Hounstein has plans by T. F. Schneider, 1110 F St. N. W., Washington, for erection of three dwellings on 5th St. N. E.; two stories; brick; cost \$7500.

Fla., Plant City.—G. W. Fuster has plans by R. E. Fletcher, Plant City, Fla., for proposed eight-room dwelling.

Ga., Augusta.—Pronaut estate will erect four cottages facing Augusta Arsenal; cost \$25,000.

Ga., Augusta.—Lloyd Preacher will erect dwelling; stucco, with tile roof; hardwood floors; steam heat; electric and gas lighting; cost \$6000; plans by Mr. Preacher.

Ga., Augusta.—Mrs. Meta. M. Horne has plans by G. Lloyd Preacher, Augusta, for proposed dwelling; stucco, with tile roof; electric lighting; cost \$5000; will let contract February 24.

Ga., Crawford.—Charley Marshall, Lexington, Ga., will erect residence.

Ga., Lexington.—E. W. Johnson has awarded contract to E. Johnson, Lexington, for erection of residence; cost \$10,000.

Ga., Savannah.—Hugh M. Comer will erect residence.

Ga., Savannah.—R. M. Hitch has plans for

erection of residence southwest corner Estill and Atlantic Aves.; 112x143 feet; cost \$8000.

Ia., New Orleans.—B. D. Ladd Construction Co., Monteleone Hotel, will erect dwellings; recently noted; 15 buildings of various sizes; ordinary construction; cost \$50,000; plans and erection by B. D. Ladd.

Ga., Savannah.—Standard Investment Co. will erect two dwellings; two stories; frame.

Md., Baltimore.—Piel Construction Co., 623 Equitable Bldg., prepared plans for erection of 32 dwellings on north and south side Arunah Ave., between Benton and Second Sts.; 23 dwellings to be 24x100 feet; six, 25x100 feet; corner house, 26x100 feet; Pennsylvania iron-spot brick; bay windows; detachable porches; electric lights; steam heat; hardwood finish.

Md., Baltimore.—A. C. Mylander & Bros., Ellicott City, Md., have plans by Jacob Gerwig, 11 East Lexington St., Baltimore, for erection of three dwellings on Carrollton Ave. near Saratoga St.; two stories.

Md., Baltimore.—Thomas E. Biddison, 1832 West Baltimore St., has plans by C. M. Fritz, 11 East Pleasant St., Baltimore, for erection of residence northeast corner Chestnut Ave. and 12th St.; two and one-half stories; 50x77 feet; cost \$10,000; and for residence on Chestnut St. east of 12th St.; two and one-half stories; 38x77 feet; slate roof; cost \$5000.

Md., Baltimore.—Sydney L. Bonis awarded contract to Fidelity Construction Co., 61 Knickerbocker Bldg., Baltimore, for erection of residence on Duvall Ave. near Mount Holly; 36x42 feet; steam heat; hardwood interior; asbestos shingle roof; cost \$7500.

Md., Baltimore.—Clemens Belkireh awarded contract to Fidelity Construction Co., 61 Knickerbocker Bldg., Baltimore, for erection of residence on Duvall Ave. near Mount Holly; 36x42 feet; steam heat; hardwood interior finish; asbestos shingle roof; cost \$7500.

Md., Baltimore.—Clinton P. Greer, 634 North Carrollton Ave., is having plans prepared for erection of residence at Beulah Villas, Walbrook.

Md., Baltimore.—Provident Realty Corporation, 229 St. Paul St., has plans by Henry Tinley, 314 N. Charles St., Baltimore, for erection of dwelling southwest corner Roslyn and Piedmont Aves.; two and a half story; frame; slate roof; cost \$5000.

Md., Baltimore.—M. Fillmore Carter, 1019 Milton Place, will erect 76 semi-detached dwellings on Pressman St., near Bloomingdale Rd.; fronts of Roman pressed brick; front and rear porches; cost \$200,000; plans by Stanislaus Russell, Clifton Ave. and 7th St., Baltimore.

Md., Baltimore.—John F. Carter, Park Heights Ave. near Glenn Ave., will erect 19 dwellings on 5th St. between Presbury St. and Westwood Ave.; two stories; cost \$11,000; plans by Jacob F. Gerwig, 210 East Lexington St., Baltimore.

Md., Baltimore.—George J. Schuster, 1823 North Mount St., has plans by William Ludwig for erection of dwelling northwest corner Oakfield and Springdale Aves.; 2½ stories; frame; 30x32 feet; slate roof; hardwood finish; cost \$3000.

Md., Linthicum Heights (not a postoffice). William Duff, Westport, Baltimore, is having plans prepared by Herbert C. Aiken, 223 St. Paul St., Baltimore, for erection of residence; two and a half stories; frame.

Miss., Biloxi.—J. H. Hammett, New Orleans, La., has awarded contract to T. J. Rossell Manufacturing Co., Biloxi, for erection of \$3000 dwelling.

Mo., Kansas City.—R. J. Thorne has purchased five-acre site in Sunset Addition and has plans by John W. McKenzie, Kansas City, for erection of residence.

Mo., Kansas City.—Gordon Beaham has purchased site in Southwood Park and will erect dwelling.

Mo., St. Louis.—Doerflinger Investment Co. will erect 20 dwellings in Ellinwood Park; cost \$30,000.

Mo., St. Louis.—B. Tegethoff will erect residence on Parkview.

Mo., St. Louis.—Alexander Kessler has plans by J. P. Bradshaw, Liggett Bldg., St. Louis, for erection of residence; two and one-half stories; 35x35 feet; cost \$8000.

Mo., St. Louis.—E. C. King has plans by Lawrence Eward, Security Bldg., St. Louis, for erection of residence in Kirkwood; cost \$12,000.

Mo., St. Louis.—S. J. Ewald has plans by Lawrence Eward, Security Bldg., St. Louis, for erection of residence at Hamilton and Calanue Aves.

Mo., St. Louis.—Mrs. J. T. Hastedt has plans by J. P. Bradshaw, Liggett Bldg., St.

Louis, for erection of residence in Parkview; cost \$6000.

Mo., St. Louis.—Mrs. Lucy M. Valle has plans by T. C. Lee, Syndicate Bldg., St. Louis, for erection of residence; two and a half stories; 48x37 feet.

Mo., St. Louis.—O. J. Boehmer, Holland Bldg., is preparing plans for erection of residence; 30x39 feet; cost \$5000.

Mo., St. Louis.—Catherine Weindel has plans by Foell Building Co., 3347 California Ave., St. Louis, for erection of residence.

Mo., St. Louis.—Elisha G. Scudder will erect residence on Kingsbury terrace; 90x172 feet; two stories; brick; A. J. Traussig Construction Co., contractor, St. Louis.

Mo., St. Louis.—Edward L. Pretorius will erect dwelling on Pine St.; two and one-half stories; brick and stone; cost \$20,000; plans have been prepared.

N. C., Charlotte.—S. W. Dandridge awarded contract to R. M. Usher for erection of eight-room residence recently noted.

N. C., Charlotte.—W. D. Rock is having plans prepared for erection of residence.

N. C., Elizabeth City.—A. M. Wiley, Snowden, N. C., has purchased site for \$20,000 and will erect dwellings.

N. C., Greensboro.—C. T. Lipscomb will erect residence on West Market St.

N. C., Statesville.—L. B. Patterson has purchased site and will erect dwelling; cost about \$4000; correspondence with architects desired.

N. C., Wadesboro.—W. H. Morton and John W. Gulledge will erect residence.

Okla., Lawton.—D. L. Lindsley, 114 Gore Ave., will expend \$1550 to erect dwelling; 28x40 feet; frame; stoves; electric lighting; plans by G. Dale, Lawton, Okla.; contract recently noted awarded to F. Carlson, Lawton, Okla.

Okla., Lawton.—Ben Boyd will expend \$2800 to erect dwelling, contract recently noted awarded to F. Carlson, Lawton; 49 feet 6 inches by 36 feet 6 inches; frame; stoves; electric lighting; plans by G. Dale Lawton.

Okla., Norman.—Chas. N. Gould awarded contract to W. F. Flood, Norman, for erection of dwelling; 50x40 feet; concrete and wood; steam heat and fireplaces; electric lighting; cost \$2500; plans by owner.

S. C., Spartanburg.—F. L. Liles has plans by Keith Company, Minneapolis, Minn., for brick dwelling recently noted; cost within \$10,000; will open bids February 29.

Tenn., Knoxville.—Phil J. Brisco has plans by Geo. F. L. Barber, Knoxville, for erection of dwelling.

Tenn., Knoxville.—Mrs. Elizabeth Gibson will invite bids soon for erection of dwelling; plans by R. F. Graf, Knoxville.

Tenn., Knoxville.—A. H. Nave has plans by R. F. Graf, Knoxville, for erection of dwelling on White Ave.; bids to be invited.

Tenn., Knoxville.—J. G. Sterchi has plans by R. F. Graf, Knoxville, for erection of dwelling; bids to be invited.

Tenn., Memphis.—Mrs. Edwin Miller has plans by John Galsford, Memphis, for erection of residence; brick; cost \$8000.

Tenn., Memphis.—R. H. Vance has plans by Hunker & Cairns, Memphis, for erection of residence, garage and other buildings; brick; white stone trimmings; cost \$20,000.

Tenn., Nashville.—F. O. Watts will erect residence on Acklen Ave.; cost \$15,000.

Tenn., Nashville.—N. D. Overall will erect residence at 53 Linden Ave.; two stories; brick veneered; cost \$3500.

Tenn., Nashville.—A. H. Meyer has plans by Asmus & Norton, Nashville, Tenn., for dwelling; two stories; ordinary construction; cost \$10,000.

Tex., Houston.—E. M. Nutting, Los Angeles, Cal., is organizing company to erect 50 dwellings in Westmoreland Farms Addition; estimated cost \$150,000.

Tex., Victoria.—A. J. Fimbel will award contract soon for erection of dwelling.

Tenn., Nashville.—G. H. Baskette is having plans prepared by Thomas S. Marr, Nashville, for erection of frame bungalow; porch, with Greek Doric columns; roof and walls shingles; hardwood floors; hot-air heat.

Tenn., Nashville.—John J. Heflin has awarded contract to W. T. Causey & Bro., Nashville, for erection of bungalow; waterproof cream brick; porch and terrace; Bowing Green stone; interior finish white mahogany and hardwood; furnace; cost \$6000; plans by Thomas S. Marr, Nashville.

Va., Big Stone Gap.—J. B. Ayers contemplates erection of 10-room dwelling; cost \$5000.

Va., Big Stone Gap.—E. E. Goodloe con-

temples erection of 10-room dwelling; cost about \$5000.

Va., Norfolk.—C. M. Barry awarded contract to Gregory & Williamson, 701 Law Bldg., Norfolk, Va., for erection of dwelling; three stories and basement; 30x70 feet; brick and stone; hot-water heat; cost \$12,000; plans by B. F. Mitchell, Norfolk. (Recently mentioned.)

Va., Portsmouth.—Mrs. Judson Cunningham, 102 East Franklin St., awarded contract to Mr. Hutchins, Portsmouth, for three tenement-houses recently noted; two stories; 20x40 feet each; ordinary construction; brick; stoves; gas lighting; cost \$6250; plans by G. W. Davis & Bros., Richmond, Va.

Va., Richmond.—Mrs. A. H. Straus will erect residence on Monument Ave.; three stories; brick; cost \$12,000.

GOVERNMENT AND STATE BUILDINGS

Ga., Milledgeville—Reformatory.—Prison Commission, G. R. Hutchens, chairman, awarded contract to J. W. McMillan & Sons of Milledgeville to erect State reformatory building; 40x62 feet; brick; fireproof; steam heat; electric lighting; estimated cost, \$5000; plans by A. C. Bruce, Atlanta, Ga. (Contract recently reported awarded has been rescinded.)

Ky., Lexington—Postoffice.—Treasury Department, office of Supervising Architect James Knox Taylor, Washington, D. C. Proposals will be received until March 25 for extension, remodeling, etc. (including plumbing, gas piping, heating apparatus, electric conduits and wiring), of United States post-office at Lexington in accordance with drawings and specifications, copies of which may be had from custodian at Lexington or at above office at discretion of architect.

Tex., Fort Sam Houston.—Appropriation of \$200,000 is available for construction of buildings, including officers' and non-commissioned officers' quarters; Tilman Campbell, constructing quartermaster, is preparing plans for number of buildings to be erected during coming year; bids are being invited on ice plant, pumping station and concrete reservoir, representing expenditure of from \$65,000 to \$70,000; temporary aeroplane shed, costing \$1450, is to be constructed upon arrival of Lieut. B. D. Fouloulois of Signal Corps; bids will be invited at once for double set of Hospital Corps sergeants' quarters, to be constructed of brick, at cost of \$8000, and located at New Post; work will begin at once on erection of cemetery lodge in National Cemetery, to be two stories and basement, of brick, with concrete foundation, and cost \$6600; besides these structures, there is still remaining \$150,000 for additional buildings; about 14 structures are proposed for 1910, comprising commanding officers' quarters, bachelor officers' quarters, artillery band quarters, two administration buildings, one for cavalry and one for artillery; two guardhouses for artillery and cavalry; possibly post exchange for New Post; about six buildings for non-commissioned officers' quarters, several stables, guardhouses and shops, etc.

Va., Norfolk—Stable.—U. S. Marine Corps, Quartermaster's Office, Washington, D. C. Proposals will be received until March 1 for erection and completion of brick stable at marine barracks, navy-yard, Norfolk, Va. Proposal blanks, plans, specifications and other information can be obtained from commanding marine officer, Norfolk, Va., or from F. L. Denny, Colonel, Quartermaster.

HOTELS

Ark., Jonesboro.—Charles Claunch, proprietor American Hotel, will erect three-story annex to hotel; old building will be remodeled.

Ark., Eureka Springs.—Clarence Stillion of Eureka Springs has contract to rebuild portion of Crescent Hotel destroyed by fire.

Ark., Hope.—J. H. Betts will erect hotel; 40 rooms; cost \$20,000.

Ga., Savannah.—Stock company, F. B. Stabb, Pulaski Hotel, president, will erect previously noted hotel on Tybee Island; concrete structure; 150 rooms; cost \$150,000; further plans not announced.

Ky., Hopkinsville.—Samuel Fleming, proprietor of Fleming's Cave, will erect hotel at entrance to cave; will be connected with cave by shafts, and every apartment will be supplied with flues; electric fans for circulating air of cave with which hotel is to be ventilated.

Ky., Lexington.—Milton Young had plans prepared by and awarded contract to Hendrick, Moore & Young Company, Lexington, for erection of hotel building recently men-

tioned; seven stories; 93x175 feet; brick, iron and wood; electric and natural gas lighting; electric freight and passenger elevators; cost \$150,000.

N. C., Durham.—Alphonse Cobb, proprietor Corcoran Hotel, will erect addition to hotel, making 100 rooms.

N. C., Wilmington.—Wrightsville Beach Hotel Co., E. L. Hinton, manager, awarded contract to Joseph Schad of Wilmington, to erect addition to Seashore Hotel; three stories and basement; 170x60 feet; 100 bathrooms in basement; 60 rooms, each with bath, on upper floors; ordinary frame construction; electric wiring; cost \$20,000; plans recently noted prepared by Joseph F. Leitner, Garrell Bldg., Wilmington. (See "Machinery Wanted.")

Okla., Tulsa.—Tulsa Hotel Co. is being organized to erect hotel at 3d St. and Cincinnati Ave.; 10 stories; 110x140 feet; first floor for stores and remainder for hotel; cost \$250,000. Address, care of Mitchell & Jenal.

Tex., Galveston.—Charles T. Brian, Jr., and Peyton S. Ingraham leased Gulfview Hotel and will remodel.

Tex., McAllen.—J. W. Blackburn will erect 18-room hotel.

Tex., San Antonio.—Silva Heinman will not erect proposed addition to hotel. (Atlee B. Ayers, San Antonio, Tex., recently noted as preparing plans.)

Tex., San Antonio.—Southwest Texas Land Co., W. L. Quinn, president, contemplates erection of hotel.

Va., Lynchburg.—R. Stockton Terry has, it is reported, given option on Arlington Hotel to parties who will probably erect fireproof hotel containing 200 rooms.

MISCELLANEOUS STRUCTURES

Ala., Birmingham—Grandstand.—Birmingham Club, R. H. Baugh, president, will construct grandstand; reinforced-concrete construction; seating capacity 6000; cost \$15,000.

Ark., De Queen—Stores.—H. Callahan and B. T. Nail awarded contract to R. R. Roland, De Queen, for erection of two stores; one 25x60 feet, one 25x100 feet; cost, \$1500 and \$2300, respectively. (Recently noted as one building.)

Ark., Tuckerman—Lodge.—Kirkpatrick Lodge, No. 192, F. and A. M., will rebuild structure recently burned; two stories; 80x50 feet; first floor to contain store; second floor lodge hall; ordinary brick construction; cost \$7500. Address L. T. Slayden.

D. C., Washington—Engine-house.—Thos. H. Melton, 621 F St. N. W., Washington, is lowest bidder for erection of engine-house No. 2; Wm. V. Judson and others, Commissioners D. C. (Recently mentioned.)

Fla., Perry—Jail.—Taylor County Commissioners will consider plans and specifications February 21 for new jail and cells or building to the old so as to conform to last act of Legislature, and sealed bids will be received for building jail until March 27; plans and specifications will be on file with John C. Calhoun, Clerk of Circuit Court at Perry, after February 21; certified check for \$300 must accompany each bid.

Fla., Plant City.—S. E. Neuys has plans by R. E. Fletcher, Plant City, for proposed brick business building; 70x30 feet.

Fla., Plant City—Store.—H. B. Wordehoff has plans by and awarded contract to R. E. Fletcher, Plant City, Fla., for erection of store building recently noted; two stories; 78x80 feet; brick; electric lighting; cost \$7500. (See "Machinery Wanted.")

Fla., Tampa—Business.—G. A. Pettaway has purchased site for \$33,500 and will erect business block.

Fla., Tampa—Masonic Lodge.—Hillsborough Masonic Lodge will erect structure; three stories; brick or reinforced concrete; 85x85 feet; cost \$35,000. (Lately mentioned.)

Ga., Atlanta—Stores.—T. R. Sawtell is having plans prepared for erection of number of stores on South Pryor St.; two stories and basement; 105x108 feet; mill construction; cost \$25,000.

Ga., Atlanta—Store.—S. M. Inman awarded contract for erection of \$37,500 store building; six stories and basement. (Lately mentioned.)

Ga., Augusta—Store.—Augusta Drug Co. at 307 Jackson St., has purchased that and adjoining property; will improve at cost of about \$2000; will install sprinkling apparatus.

Ga., Augusta—Store.—N. L. Willett Seed Co., 309 Jackson St., will remove wholesale and retail seed business to 549 Broad St.; will make improvements costing from \$3000 to \$5000.

Ga., Columbus—Gymnasium Hall.—Y. M. C.

A. will enlarge gymnasium hall; estimated cost, \$10,000.

Ga., Reynolds.—W. M. Musslewhite, president Farmers and Merchants' National Bank, has plans by J. A. Wilson for erection of store recently noted; 80x80 feet; fireproof construction; cost \$4000.

Ga., Savannah—Store.—R. R. Oakman has purchased three-story tenement building southwest corner Broughton La. and Dayton St. and will remodel for store and apartment-house; estimated cost of improvements, \$6000.

La., Charleston—Store, etc.—Minden Lumber Co. will erect building recently mentioned; one-story structure with stone and brick front; size 50x80 feet; cost \$3000; will also erect 60x150-foot lumber shed; building plans and construction by company.

La., Lafayette—Store.—Lacoste Hardware Co. closed contract with J. A. Vandyke for construction of store; two stories; brick; cost \$3000.

Md., Baltimore—Store.—Anthony Dipaula, 500 East North Ave., has plans by Arthur L. Blatchley, 2911 York Rd., Baltimore, for erection of store and dwelling on North Ave. near Charles St.; 20x30 feet; steam heat; tin roof; cost \$7000. (Lately mentioned.)

Md., Keedysville—Lodge Hall.—Banner Council, Junior Order of United American Mechanics, will erect lodge hall; brick; three stories.

Miss., Lambert—Store.—D. A. Yarbrough awarded contract to Geo. Hawkins, Lambert, for erection of store building recently mentioned; two stories; brick; 25x70 feet; cost \$3000.

Miss., Starkville—Jail.—Oktibbeha County Board of Supervisors accepted plans by Pauly Building Co., St. Louis, Mo., for improvements to jail; cost \$4000.

Mo., Joplin—Hospital.—O. R. Simpson, Thomas Liveley, A. W. Grannis and Robert White are interested in establishment of hospital for miners; estimated cost \$120,000.

Mo., St. Louis—Business.—Charles Lipp estate has plans by H. J. Burgdorf, 2604 Virginia Ave., St. Louis, for erection of building; two stories; 110x40 feet.

Mo., St. Louis—Clubhouse.—Alton Slough has plans by O. J. Boehmer, Holland Bldg., for erection of clubhouse.

Mo., St. Louis—Mercantile.—John Swift Real Estate & Investment Co. will erect mercantile building on Pine St.; 60x10 feet; four stories; concrete; cost \$40,000.

N. C., Maxton—Maxton Hospital will erect addition to hospital; ordinary construction; open fireplaces; electric lighting; cost \$8000. Address A. B. Croom.

N. C., Nantahala—Lodge.—R. L. Porter, Franklin, N. C., will rebuild burned lodge. (Lately mentioned.)

N. C., Rockingham.—M. L. Hinson will erect number of store buildings.

N. C., Rockingham—Jail.—Richmond county will erect jail and courthouse. Address Richmond County Commissioners. (See "Courthouses.")

N. C., Wentworth—Jail.—Rockingham County Commissioners will consider plans and specifications March 14 for erection of \$12,000 jail.

Okla., Tulsa—Business.—L. K. Cone has plans by L. H. Ruggles, Tulsa, for business building recently noted; three stories; 50x140 feet; ordinary construction; cost \$25,000. (See "Machinery Wanted.")

S. C., Greenwood—Store.—A. J. Bell and J. W. Bradford of Merchants' Fruit Co. will erect store building; two stories; brick.

S. C., Charleston—Library.—Charleston Library Society, Robert Wilson, president, has purchased site on Trade St. and will erect fireproof library building.

Tenn., Bristol—Business.—Claude H. Brady, Roanoke, Va., has awarded contract to Stauth & Wilson, Bristol, for rebuilding burned building, lately mentioned; three stories; will install electric elevator; plumbing contract awarded to Lynn Hobson, Bristol.

Tenn., Chattanooga—Mercantile.—Stone Fort Land Co. awarded contract to Willingham & Co., Chattanooga, for lumber for mercantile building; to J. W. Wells & Bros., Chattanooga, for brick work; cost \$25,000; plans by Downing & Pringle, Chattanooga. (Previously mentioned.)

Tenn., Chattanooga—Business Building.—Z. W. Wheland, care of Wheland Machine Works, 1201 Whiteside St., will erect 50x85-foot brick building, to be occupied by Purse Printing Co.; L. A. Hitzfeld, 5 Custom-house Sq., Chattanooga, foreman for owner; excavation commenced.

Tenn., Johnson City—Hardware Store.—Summers-Parrott Hardware Co. has plans by

Mitchell, Gredig & Lynn, Johnson City, for proposed building; four stories and basement; 150x107 feet 6 inches; mill construction; steam heat; will install two freight elevators; cost \$50,000; plans not complete.

Tenn., Knoxville—Exposition.—Appalachian Exposition Co. awarded contract at \$35,000 to Brimer & England Bros., Knoxville, for erection of exposition building; 400x150 feet; exterior finished in stucco; plans by Richard Graf, Knoxville. (Lately mentioned.)

Tenn., Memphis—Clubhouse.—St. Francis Rod and Gun Club will rebuild burned clubhouse, lately mentioned.

Tenn., Nashville—Masonic Temple.—Board of Trustees, Cumberland Lodge, F. and A. M., awarded contract to Foster, Creighton, Gould & Co., Nashville, Tenn., for erection of Masonic Temple; three stories; 80x120 feet; fireproof construction; heating and lighting undecided; cost \$100,000; plans by C. L. Thompson, Little Rock, Ark. (Recently incorrectly noted as having plans prepared by Foster, Creighton, Gould & Co.)

Tex., Abilene—Store.—L. A. Pires, Dallas, will erect proposed brick store building; cost \$4000.

Tex., Bryan.—M. E. Rhodes has plans by C. E. Jenkins for proposed store building; 18x100 feet; cost \$3500. Address Mr. Rhodes.

Tex., Crowell.—Edwards & Sandifer will receive bids until February 21 for erection of building; 50x130 feet; two stories; certified check for \$350 must accompany bid; plans and specifications by Green Bros., Hugo, Okla.

Tex., Hempstead—Store.—G. S. Osborne has awarded contract for erection of brick and concrete store.

Tex., Houston—Sanitarium.—Baptist Association will erect sanitarium at Lamar Ave. and Smith St.; cost \$75,000.

Tex., McAllen—Store.—C. O. Allen Maule will erect store building; two stories; brick; cost \$7000; contract awarded.

Tex., McAllen—Store.—Manuel Samano will erect store; 70x100 feet; cost \$7000.

Tex., McAllen—Bottling.—McAllen Ice & Power Co., R. S. Pershing, president, will operate bottling plant in connection with ice plant. (See "Ice and Cold-Storage Plants.")

Tex., New Braunfels.—Geo. Knoke awarded contract to C. Flery, New Braunfels, for erection of proposed store building; 84x123 feet; fireproof construction; heating and lighting not decided; cost within \$30,000; plans by C. V. Seutter, San Antonio, Tex. Address Mr. Seutter.

Tex., Palacios—Stores.—Duncan Ruthven, B. M. Hatchell and A. R. Hillyer will construct three brick store buildings.

Tex., Palacios—Business.—Ed. Pasai is having plans prepared for erection of business building; two stories; brick.

Tex., Palacios—Store.—Robert J. Hill will erect store; two stories; double front; cement block.

Tex., Port O'Connor (not a postoffice)—Pavilion.—Calhoun Cattle Co., Victoria, Tex., is planning erection of \$15,000 pavilion.

Tex., Runge—Lodge.—Woodmen of the World will erect \$10,000 lodge building.

Tex., San Marcos—Business.—Walter Hofheinz and Gus Moges will erect block of business buildings.

Tex., Seguin—Store.—A. B. Freeman had plans prepared by Leo J. M. Dielmann, San Antonio, Tex., for fireproof store building recently mentioned; size 34x96 feet; cost \$10,000.

Tex., Silsbee—Store.—Santa Fe Townsite Co. will expend \$20,000 to erect building; two stories; 50x100 feet; ordinary construction; electric lighting; plans by Jones & Tabor, Houston. (Contract recently noted awarded to W. C. Whitney, Beaumont.)

Tex., Stamford—Sanitarium.—West Texas Baptist Sanitarium Association, F. S. Grover, interested, has plans by Elmer G. Withers, Stamford, for sanitarium recently noted; three stories and basement; 180 feet long; fireproof construction; cost \$100,000.

Tex., Tolar—Store.—R. P. Campbell will erect 80x100-foot rock store building; cost \$6000.

Tex., Victoria—Business.—Edmund L. Jecker will erect business building.

Tex., Victoria—Business.—L. P. Liebold will soon award contract for erection of two-story business block.

Va., Crewe—Y. M. C. A.—Young Men's Christian Association will erect building.

Va., Phoebeus—Store.—James F. Grant awarded contract to Charles Hillman, Phoebeus, for erection of store; cost \$6000.

Va., Richmond—Lodge.—Richmond Lodge of Elks is having plans prepared for erection of lodge.

W. Va., Clarksburg—Masonic Temple.—Masonic Lodge has plans by Edward C. Pruitt, Columbus, O., for erection of Masonic Temple; 47x140 feet; ordinary construction; direct steam heat; electric lighting; electric elevator; cost \$60,000.

W. Va., Kenova—Store.—Mingo Lime & Lumber Co., Williamson, W. Va., will erect store building.

W. Va., Martinsburg—Hospital.—City Hospital has plans by Woltz & Porter, Waynesboro, W. Va., for erection of hospital annex.

W. Va., Sistersville—Store.—C. E. Shupbach has awarded contract at \$15,000 to Dayton & Francis, New Martinsville, W. Va., for erection of store; two stories; brick; 90x60 feet; plans by W. J. Alexander, New Martinsville. (Lately mentioned.)

W. Va., Wheeling—Store.—Peter Bachman will rebuild burned store; three stories; brick. (Lately mentioned.)

W. Va., Wheeling—Car Barn.—Wheeling Traction Co., recently noted to erect car barn, has not made definite plans for increasing shop or car barn facilities.

MUNICIPAL BUILDINGS

Ga., Macon—Engine-house.—City awarded contract at \$7307 to Wilder & Paulin of Macon to erect engine-house on Ward St. in Vineville; J. Ross Bowdrie, chairman Fire Committee. (Recently mentioned.)

Miss., Brookhaven—City Hall.—City adopted plans by Paul Revere Henkel, New Orleans, La., for city hall; 50x68 feet; two stories; ordinary construction; pressed brick; stone trimmings; first floor to contain public library, City Clerk's office, etc.; vestibule to have marble wainscoting and tile floor; second floor to contain Mayor's office and assembly hall; steam heat; \$12,000 bond issued authorized. (Previously mentioned.)

Mo., Kansas City.—City will vote in April on issuance of \$125,000 of bonds for city market improvements, \$20,000 of bonds for tuberculosis hospital and \$50,000 for house of correction. Address The Mayor.

Okla., Tulsa—City Hall.—City will vote on issuance of \$100,000 of bonds for erection of city hall. Address The Mayor. (See "Waterworks.")

Okla., Oklahoma City—Hospital.—City, Oklahoma county and others are considering erection of hospital for consumptives; plans submitted by Keyser & Scerlber of Oklahoma City call for structure of cement and brick; two stories, basement and attic; elevator; cost \$10,000; Dr. A. E. Davenport, county superintendent of health.

Tex., Houston—Auditorium.—City awarded contract to H. L. Stevens Company of Houston at \$235,000 for erection of auditorium; 150x250 feet; fireproof; Texas granite base, remainder of pressed brick and terra cotta; seating capacity of main auditorium, 6500; arena to have portable seats; balcony and gallery; stage 50x35 feet; foyer 8x10 feet; subway carriage entrance; 11 main exits; promenade 35 feet wide around entire arena; spiral walk 8 feet wide, to lead to second floor; banquet hall 50x35 feet; plans by Mauran & Russell, St. Louis, Mo.; H. B. Rice, Mayor. (Recently mentioned.)

Tex., Houston—Fire Station.—City awarded contract to D. D. Pittman of Houston to erect fire station on Sampson St.

RAILWAY STATIONS

Ark., Arkadelphia—St. Louis, Iron Mountain & Southern Railway, M. L. Byers, chief engineer maintenance of way, St. Louis, Mo., will expend about \$5000 in terminal improvements, including passenger station, freight house, cotton platform, etc.

Ark., Prescott—St. Louis, Iron Mountain & Southern Railway, M. L. Byers, chief engineer maintenance of way, St. Louis, Mo., and Prescott & Northwestern Railway, H. E. Bemis, manager, have completed plans for union passenger station; present station will be converted into freight depot.*

La., Shreveport—St. Louis Southwestern Railway, M. L. Lynch, chief engineer, Tyler, Tex., and Louisiana & Arkansas Railway, W. H. Vance, engineer maintenance of way, Stamps, Ark., will, it is reported, erect passenger station to cost \$45,000.

Okla., Oklahoma City—Gulf, Colorado & Santa Fe Railway, F. Merritt, chief engineer, Galveston, Tex., will remodel passenger station.

Tex., Abilene—Texas & Pacific Railway, B. S. Wathen, chief engineer, Dallas, Tex., has plans ready for bids on new depot; to cover ground space of 152 feet 4 inches by 46 feet; main building to be connected with baggage-room by 20-foot vestibule; cypress seats and casing; plaster walls stencilled; exterior walls of bronzed mottled Denton

brick; concrete foundations; signal tower over ticket office; gas and electric lighting; steam heat; cost \$35,000. (Previously noted.)

Tex., Mercedes—St. Louis, Brownsville & Mexico Railway, E. C. Burgess, engineer construction, Kingsville, Tex., will, it is reported, erect freight depot.

Va., Norton—City Hall.—City will vote March 10 on issuance of \$15,000 of bonds for erection of city hall. Address The Mayor. (Recently mentioned.)

Va., Norfolk—Norfolk & Western Railway, C. S. Churchill, chief engineer, Roanoke, Va., will, it is reported, erect brick freight station.

SCHOOLS

Ala., Birmingham—Board of Education, John L. Parker, president, is preparing to receive bids for erection of East End Colored School; 400x140 feet; cost \$25,000; plans by Harry B. Wheelock, 17 Steiner Bldg., Birmingham. (Lately mentioned.)

Ala., Jasper.—Plans for proposed high school are being prepared by Whilldin & Price of Birmingham, Ala. (not by D. O. Whilldin, as recently stated); two-story fireproof structure; 80x100 feet; cost \$15,000; bids to be opened March 1; J. L. Sowell, secretary Board of Education.

Ark., Arkansas City—School Board, R. W. Smith, president, will receive bids until March 1 for erection of school; two stories and basement; plans and specifications on file at office of School Board and at office of Clyde A. Ferrell, Room 23 Moore & Turner Bldg., Little Rock, Ark. (Lately mentioned.)

Ark., Osceola—School Board has awarded contract to W. A. Prather, Pine Bluff, Ark., for construction of school (lately mentioned); two-story and basement; cost \$25,000.

D. C., Washington—Cuno H. Rudolph and John A. Johnston, Commissioners, will receive bids until February 23 for constructing school corner 10th and E sts. S. W.; blank form of proposals, etc., may be obtained from chief clerk, engineer department, Room 427 District Bldg.

D. C., Washington—Gallaudet College, Edw. Gallaudet, president, will rebuild burned college building. (Lately mentioned.)

Fla., Fort Myers—City will erect \$25,000 school. Address The Mayor.

Ga., Hurt'sboro.—City awarded contract to W. B. Harris, Columbus, Ga., for erection of \$10,000 school; two stories; brick; plans by T. W. Smith & Co., Columbus, Ga. (Lately mentioned.)

Ga., Savannah—School Committee, Board of Education, awarded contract at \$3500 to Woolard & Cunningham, Savannah, for addition to Henry St. school; double-story wing on east and west side of main building; pressed brick; plans by H. W. Witcover, Savannah.

Ga., Shellman—City will vote on issuance of \$5000 school bonds. Address The Mayor.

Ga., Shreveport—Parish School Board awarded contract to W. H. Werner, Shreveport, for erection of school on Hope St.; cost \$60,000.

Ga., St. George—School Board, J. D. E. Williams, secretary, is receiving bids for erection of \$10,000 school. (Lately mentioned.)

Ga., St. Simons, R. Sta. Brunswick—West Point Institute, F. D. Alken, president, is having plans prepared for erection of \$50,000 school; will install electric-lighting plant, laundry, dairy, creamery and cannery.

La., Jeanerette—Iberia parish purchased site for erection of \$20,000 high-school building from Roane & Watts; contract will be let soon. (Roane & Watts recently incorrectly noted to have been awarded contract.)

La., New Orleans—City purchased at \$14,000 building site for proposed school in 14th ward; \$50,000 appropriated; time of erection uncertain; may not be built within the year; W. J. Hardee, City Engineer.

Md., Baltimore—Architectural Commission engaged Alfred Cookman Leach, 223 North Charles St., Baltimore, to prepare plans for erection of School No. 6, Ann St. near Canton Ave., and Edward H. Glidden, Glen Bldg., 16 St. Paul St., Baltimore, to prepare plans for erection of School No. 70, William St. and Warren Ave.; to contain 24 rooms; cost \$115,000 each.

Md., Baltimore—Maryland School for Blind awarded contract to John E. Marshall & Son, 121 Mercer St., Baltimore, for erection of several buildings at Overlea; plans by Joseph Evans Sperry, Calvert Bldg., Baltimore. (Lately mentioned.)

Miss., Hattiesburg—City will vote in March on issuance of \$75,000 bonds for schools. Address The Mayor.

Tex., Alvin—City will vote in March on \$2,000 bond issue for schools. Address The Mayor.

Tex., Amarillo—Amarillo Independent School Commissioners awarded contract to

Brooks Pearson, Waco, Tex., for erection of high school; two stories and basement; cost \$50,000. (Lately mentioned.)

Tex., Rolling Fork—Board of Supervisors, G. W. Well, clerk, has plans by M. J. Donovan for school building; ordinary construction; cost \$600; will open bids March 1.

N. C., Raleigh—Agricultural and Mechanical College accepted plans by Frank B. Simpson, Raleigh, for erection of electrical and engineering building; 170x30 feet; brick; fireproof; two stories and basement; cost \$50,000. (Lately mentioned.)

Okla., Chickasha—State Board of Public Affairs, Guthrie, Okla., awarded contract at \$91,050 to Jonathan & Moore, Wilburton, Okla., for erection of industrial school.

Okla., Enid—City will erect school building in block 72. Address The Mayor. (Lately noted as voting on issuance of \$50,000 bonds.)

Okla., Lawton—Frank Pierce, First Assistant Secretary of Interior, Washington, D. C., will receive sealed bids in duplicate until March 7 for construction of 10-room school building for North Addition; drawings and specifications on file at office of Department of Interior and at office of Board of Education, Lawton; certified check for \$25 will be required as guarantee of return of plans; right is reserved to reject any or all bids, waive technical defects, accept one part and reject the other, at interest of Government may require; proposals must be securely enveloped and marked "Proposals for construction of school building, Lawton, Okla." (Department of Interior lately noted as rejecting bids and planning to invite new ones.)

Okla., Shawnee—State Baptist University chartered by W. P. Blake, Okmulgee; G. F. McKinnis, Shawnee, and J. L. H. Hawkins, Mangum, Okla., trustees, to erect \$200,000 university.

Tenn., Fayetteville—City will expend \$16,500 to erect high-school building; 78x104 feet; ordinary construction; steam heat; electric lighting; plans by Runge & Dickey, Nashville, Tenn. (Contract recently noted awarded to Willingham & Co., Chattanooga, Tenn.)

Tenn., Johnson City—Millsigan College has plans by C. G. Mitchell, Johnson City, for erection of \$5000 science hall. (Lately mentioned.)

Tenn., Johnson City—See "Tenn., Murfreesboro."

Tenn., Lynnville—Trustees of R. B. Jones High School will erect dormitory; two stories; brick; 100x40 feet; cost \$6000.

Tenn., Memphis—See "Tenn., Murfreesboro."

Tenn., Murfreesboro—State Board of Education will receive plans until March 15 for erection of three proposed normal-school buildings at Murfreesboro, Johnson City and Memphis, including dormitories, libraries, science halls, gymnasiums, etc.; buildings at Murfreesboro and Johnson City to cost \$150,000 each; at Memphis, \$25,000; cost of dormitories \$60,000; construction of main buildings and dormitories for women to begin at once; other buildings later.

Tenn., Obion—City will vote in March on issuance of \$10,000 school bonds. Address The Mayor.

Tenn., St. Elmo—J. B. Brown, Superintendent Hamilton County Schools, will receive bids at office in Courthouse at Chattanooga, Tenn., until February 21 for erection of grammar school; plans and specifications on file at office of Huntington & Sears, 1202 James Bldg., Chattanooga, Tenn.; each proposal must be accompanied by certified check for \$500, payable to J. A. Hargraves, chairman School Board, to guarantee successful contractor will enter into contract; bidders requested to bid for old school building now on premises and enclose this bid with bid for new structure, old building to remain until close of school year; bids will be accepted for new building alone; usual rights reserved.

Tenn., St. Elmo—Hamilton County Board of Education, J. A. Hargraves, chairman, will receive bids until February 21 for erection of grammar-school building recently noted; two stories and basement; brick; composition roof; steam heat; cost \$20,000; plans by Huntington & Sears, James Bldg., Chattanooga.

Tex., Alvin—City will vote in March on \$2,000 bond issue for schools. Address The Mayor.

Tex., Amarillo—Amarillo Independent School Commissioners awarded contract to

Brooks Pearson, Waco, Tex., for erection of high school; two stories and basement; cost \$50,000. (Lately mentioned.)

Tex., Commerce—City has had plans prepared for erection of two-story school. Address The Mayor.

Tex., D' Hanis—School trustees awarded contract to Gus Birkner, D' Hanis, for erection of school.

Tex., Carlton—J. L. Thompson wants plans for school; brick or stone; two-story; cost \$900.

Tex., Carlton—J. L. Thompson wants plans for school; brick or stone; two-story; cost \$900.

Tex., Groveton—School Board, C. J. Hinmon, secretary, will receive bids until February 26 for erection of school; plans, etc., on file at office of secretary and at office of A. O. Watson, Austin, Tex.; usual rights reserved.

Tex., Groves—Board of Education will probably call for plans and specifications for school building within next 30 days; cost about \$30,000; address H. E. Ellis. (Recently noted to be rebuilt.)

Tex., Hedley—City awarded contract at \$8000 to Rawlins Bros., Memphis, Tex., for erection of school; two stories; brick.

Tex., Mart.—City will rebuild school building recently reported burned; three or four stories; 20 to 30 rooms; semi-fireproof construction; steam heat; electric lighting; cost \$50,000. Address R. W. Bass, Mayor.

Tex., Marquez—City will expend \$7500 to erect brick school; bond issue recently noted. Address D. W. Carrington.

Tex., Mexia—City has plans for erection of \$12,500 school. Address The Mayor. (Lately mentioned.)

Tex., Nixon—School Trustees awarded contract to Parker & McDonald, Nixon, for erection of school.

Tex., San Antonio—Southwest Texas Land Co., W. L. Quinn, president, contemplates erection of school.

Tex., Temple—City voted issuance of \$100,000 school bonds. Address The Mayor. (Lately mentioned.)

Va., Norfolk—School Trustees have commissioned Ferguson, Calrow & Taylor, Norfolk, to prepare plans for erection of annex at Atlantic City school No. 1 and Brambleton school No. 1.

THEATERS

D. C., Washington—National Amusement Co., Baltimore, Md., will erect theater at intersection of Florida Ave., T and 6th Sts.; 56x120 feet; brick; limestone trimmings; steel frame; reinforced-concrete floors, balcony and steps; seating capacity 1600; cost \$150,000; plans by Carroll Beale of Washington; contract awarded to Henry L. Maas, 1119-21 Ensor St., Baltimore, Md.

Ia., Lake Charles—J. L. White is having plans prepared for theater to replace burned Lyric Theater; new structure is to be of brick, steam heat, with seating capacity of 1200; estimated cost \$30,000.

Nd., Baltimore—Shubert Bros. of New York city will, it is reported, erect theater near Fayette and Eutaw Sts.

Md., Baltimore—Paradise Amusement Co., Eugene Cook, president, 2811 North Calvert St., is having plans prepared by Francis E. Tormey, 404 Wilson Bldg., Baltimore, for moving-picture theater on North Ave., between Charles St. and Lovegrove Al.; one story; brick; cost \$15,000. (Recently mentioned.)

Mo., St. Louis—Plaza Amusement Co. will erect moving-picture theater; seating capacity 500; cost \$23,000.

Mo., St. Louis—Dugan & Huff, Century Bldg., St. Louis, are preparing plans for theater at Union and Easton Aves.; three stories; 100x115 feet.

Mo., St. Louis—Corner Realty Co., 721 Locust St., awarded contract to Westlake Construction Co., Mercantile Bldg., St. Louis, to erect theater and office building; pressed brick and stone; composition roof; four stories; 148x100 feet; estimated cost \$200,000; plans by Albert Swasey, 47 West 34th St., New York city.

S. C., Anderson—S. M. Wolf and F. B. McFall have not selected architect to prepare plans for theater recently mentioned; contemplate organization and incorporation of company to erect \$30,000 building.

Tex., Fort Worth—Galves It. Turner is interested in erection of theater to cost \$40,000.

WAREHOUSES

Ala., Birmingham—Continental Gin Co. awarded contract to Allen J. Krebs of Birmingham to erect brick warehouse costing \$8000.

D. C., Washington—Washington Warehouse Co. incorporated with \$50,000 capital stock; Thomas H. Pickford, 1410 G St. N. W., Washington, president; John P. Swanson, Danville, Va., vice-president; James R. Ellerson of Ellerson & Wemple, 607 14th St. N. W., Washington, secretary-treasurer.

Ia., Lafayette—Webster Refining Co., Jennings, Ia., will erect warehouse; 45x60 feet; ordinary construction.

Okla., Oklahoma City.—Wells-Fargo Express Co. will erect one-story building for handling and storage of express; cost \$20,000.

Tex., Dallas.—Methodist Publishing Co. awarded contract to Slaughter Construction Co. of Dallas to erect warehouse; brick and concrete; fireproof; 25x60 feet; cost \$3000 to \$4000.

Va., Norfolk.—Norfolk & Western Railway, C. S. Churchill, chief engineer, Roanoke, Va., contemplates, it is reported, construction of two freight warehouses.

W. Va., Bluefield.—Bluefield Hardware Co. will erect warehouse; offices on second floor; estimated cost \$35,000.

RAILROAD CONSTRUCTION

RAILWAYS

Ark., Arkadelphia.—Plans are reported approved for the proposed freight and passenger station of the St. Louis, Iron Mountain & Southern Railway, Missouri Pacific System, at Arkadelphia. E. F. Mitchell is engineer of construction at St. Louis, Mo.

Ark., Fort Smith.—Charter has been granted for the Fort Smith & Interurban Railway Co., of which George Sengel is president. The proposed line will be 25 miles long, connecting Greenwood, Bonanza and other points with Fort Smith; capital \$100,000.

Ark., Letona.—Reported that the Doniphan Lumber Co. will build a line from Letona, on the Missouri & North Arkansas Railroad, westward into Cleburne county, about 15 miles.

Ark., Little Rock.—Fox, Paxton & Co. are reported ready to begin work on the improvements of the Rock Island's line, between Little Rock and Booneville. Reballasting is to be done, besides some improvement to the permanent way.

Ark., Little Rock.—The Chicago, Rock Island & Pacific Railway, according to a report, will spend about \$500,000 on improving its lines in Arkansas. The line to Booneville, 130 miles, will be reballasted and laid with 55-pound rails; at Booneville yards will be provided at a cost of \$40,000; passing tracks will be built; shops will be erected at Biddle, Ark., costing from \$150,000 to \$200,000. J. B. Berry is chief engineer at Chicago, Ill.

Ark., Murfreesboro.—Reported that preliminary survey is to be made for an extension of the Memphis, Paris & Gulf Railroad from Murfreesboro via Arkadelphia, Pine Bluff, De Witt and Marianna to Memphis, Tenn. Locating survey of the extension from Ashdown, Ark., to Terrell, Tex., has been completed and construction will begin in the near future.

Ark., Prescott.—Plans are reported complete and construction will soon begin on the new union station to be used by the Prescott & Northwestern Railroad and the St. Louis, Iron Mountain & Southern Railroad. O. H. Hebbig, general manager of the Prescott & Northwestern, can give information.

Ark., Rogers.—J. D. Houseman, 414 Roe Bldg., St. Louis, Mo., is reported to have arranged to begin construction immediately on an interurban railway to connect Rogers, Bentonville and Gentry, 32 miles. Roy Davis of Rogers, Ark., and others are interested.

Ark., Rogers.—An officer says that the Arkansas, Oklahoma & Western Railroad will build an extension of 35 miles from Rogers to Huntsville, Ark., including 21 wooden bridges and one steel bridge, the latter over the White River. The W. R. Fecker Construction Co. of Rogers, Ark., is the contractor.

Fla., Live Oak.—The Florida Railway Co. has increased its capital stock from \$2,000,000 to \$4,000,000 for its proposed extension to Fernandina and Jacksonville, including equipment. Frank Drew is president at Live Oak, Fla.

Fla., Orlando.—Dr. G. T. Bennett of Orlando and others are working on the plan for an electric railway from Kissimmee via Orlando to Sanford, Fla. The Board of Trade at Kissimmee is also interested.

Fla., St. Petersburg.—The Bayboro Investment Co. is reported as saying that it will begin construction about March 1 on the proposed electric railway to connect St. Petersburg with its property. H. A. Murphy is president and A. Welton superintendent.

Fla., Gainesville.—The Gainesville Midland Railroad, it is reported, contemplates building an extension via Nacoochee Valley to Murphy, N. C., touching Hiawassee, Ga., and Maysville, N. C. George J. Baldwin of Savannah, Ga., is president.

Fla., Gainesville.—Engineers are surveying for the contemplated extension of the Gaines-

ville Midland Railway from Gainesville to the Nacoochee Valley and Robertstown, Ga. The report that it would extend to Murphy, N. C., is denied by an official. Geo. J. Baldwin of Savannah, Ga., is president.

Ga., Waycross.—George W. Deen and W. W. Lambdin of Waycross represent the Board of Trade on a plan to build a railroad from Americus, Ga., via Ashburn and Ocilla to a point on the seacoast. A dispatch from Americus says the line is to run via Waycross and Ashburn to Brunswick, Ga.

Ky., Harlan.—Contract is reported let to the Callahan Construction Co. of Knoxville for construction of the Wasioto & Black Mountain Railway from Toms Creek to Harlan, about 24 miles; to be completed by August 31. It is said the work will be sublet.

Ky., Silver Grove.—The Manufacturers' Record is informed that Langhorn & Waugh of Roxbury, Va., have been awarded a contract by the Chesapeake & Ohio Railway for a large yard at Silver Grove. All of it will be shovel work, and construction will be started as soon as possible.

La., Hammond.—The Progressive Union is reported working on a plan to build an interurban railway between Hammond, Natalbany and Genesee. The Natalbany Lumber Co. and the Genesee Lumber Co. are said to be interested.

La., Melville.—The Avoyelles, Palmetto & Gulf Railroad Co. will, it is reported, soon be ready to begin construction. Hollier & Naff, engineers, have submitted maps of the route. E. A. Plauche is president and R. G. Hawkins secretary.

La., New Orleans.—Peter Lawton, one of the parties interested in the proposed railway from Algiers, opposite New Orleans, to the Gulf coast of Louisiana, is quoted as saying that as soon as the franchise is secured in Algiers survey will begin, and that gasoline motor cars will be operated on the completed road. It will run to Grand Isle, about 55 miles. Others interested are Theodore Wilkinson, H. C. Warmoth, J. J. Manson and E. F. Dyer. The first object of the line is to reach the Bellechasse plantation, 18 miles from Algiers, but it will finally be extended to the Gulf.

La., Shreveport.—Reported that work will begin shortly on the proposed union depot of the St. Louis Southwestern Railway and the Louisiana & Arkansas Railway. M. L. Lynch, chief engineer of the St. Louis Southwestern at Tyler, Tex., will, it is understood, be in charge.

Md., Baltimore.—A dispatch from New York says that the Baltimore & Ohio Railroad directors have authorized the construction of about 30 miles of third track in West Virginia. A. M. Kinsman is chief engineer at Baltimore, Md.

Md., Baltimore.—A bill is to be introduced in the Legislature to enable the Western Maryland Railroad to finance the proposed extension from Cumberland, Md., to Connellsburg, Pa. B. F. Bush is president.

Md., Laurel.—Ogle Marbury of Laurel has introduced a bill in the Legislature to incorporate the Washington, Mariboro & Drum Point Railway, Power & Lighting Co. to build a line from a point on the boundary of the District of Columbia to a point near the mouth of the Patuxent River, with branches. It will probably connect with the Washington, Baltimore & Annapolis Railway; authorized capital, \$10,000 to \$30,000. The incorporators are Francis E. Baker, G. A. M. Wells, Richard N. Ryan, Robert W. Wells, William C. Carroll, Charles C. Mayer, George Carpenter, M. Hampton Magruder, Francis S. Carney, Edward A. Fuller and C. Francis Owens.

Md., Frederick.—The Frederick Railroad Co., according to a press report, will soon let contracts for two miles of track, a freight yard and car shops. E. L. Coindentz is president and Walter S. Taylor general manager.

Md., Leonardtown.—Dr. C. V. Hayden, Jr., of Leonardtown has introduced a bill in the Legislature to incorporate the Washington & Tidewater Railroad for a line from the District of Columbia to any point in the State or to tidewater anywhere in St. Mary's county, with branches; authorized capital, \$100,000 to \$300,000. The incorporators are George Blakstone, A. M. Bowling, Francis T. Homer, James R. Duke and W. Bernard Duke of Baltimore.

Miss., Carthage.—A dispatch from Jackson says that application has been made to the Secretary of State for authority to organize the Carthage, Meridian & Panama Railroad Co. to build a line from Carthage via Union to Meridian, Miss., about 60 miles, and thence into Alabama and Florida, terminating at Panama, Fla. Paris (France) financiers are said to be interested, but the incorporators are not yet announced.

Miss., Natchez.—The Mississippi Valley Transportation Co. is reported to have obtained an option on the Bluff City Railway at Natchez and make improvements.

Miss., Pascagoula.—The Pascagoula Northern Railway Co. has amended its charter to authorize an extension from Meridian, Miss., to Memphis, Tenn. W. M. Denny is secretary of Anderson was elected secretary. It is contemplated to build a line from Greenville to Clinton, S. C., about 45 miles. Dr. W. A. Shand of Clinton and others are interested.

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Aubrey: secretary, H. C. King, Jr.; third vice-president and general manager, W. A. Cullen, all at San Antonio, Tex.; A. B. Hedges and B. S. Harrison of New York; A. L. Mattock and H. Hyman of San Antonio; J. H. Haile is treasurer.

Tex., San Angelo.—Grading is reported begun on the Atchison, Topeka & Santa Fe Railroad's proposed line between San Angelo and Pecos, Tex. C. A. Morse is chief engineer at Topeka, Kans.

Tex., Sherman.—Some surveys have been made for a local extension of the Sherman & Dallas Interurban Electric Railway. J. F. Strickland of Dallas, Tex., is president.

Va., Staunton.—The Norfolk & Western Railroad Co. is reported to have closed contract with A. M. Valz of Staunton for excavation work on the extension of the Dry Fork branch in McDowell county, West Virginia. C. S. Churchill is chief engineer at Roanoke, Va.

Tex., Temple.—Reports state that the Temple Northwestern Railway, which it is proposed to build from Temple to Hamilton, is to be extended west to connect with the Orient at Benjamin, and eastward and south to Port Arthur, Tex.

Tex., Temple.—Contract is reported signed by representatives of Temple, Gatesville and Hamilton for the building of the proposed Temple Northwestern Railway from Temple to Gatesville, Hamilton and other points. The Temple Commercial Club and others are interested.

Tex., Waco.—M. D. Parlin, chief engineer, is reported to have completed preliminary survey for the proposed Waco, Belton & Georgetown Railway, 75 miles long. An estimate of construction will now be prepared.

W. Va., Clarksburg.—Rumored that the Baltimore & Ohio will double-track the Short Line from Clarksburg to New Martinsville; also the line to Wheeling. A. M. Kinsman is chief engineer at Baltimore, Md.

W. Va., Fairmont.—Official information concerning the Buckhannon & Northern Railway shows that the route is 35 miles long, from the northern boundary of West Virginia along the Monongahela River to Fairmont, W. Va.; S. D. Brady of Parkersburg, W. Va., is chief engineer; J. T. Blair, also of that city, is president, and J. M. Schoonmaker of the Pittsburgh & Lake Erie Railway is vice-president; A. H. Blair is secretary and treasurer; among the directors are Joseph Wood of the Pennsylvania Railroad Co. at Pittsburgh and George M. Shriver of the Baltimore & Ohio Railroad Co. at Baltimore. A dispatch says that B. M. N. Langhead has begun survey and that the line will run via Morgantown and Fairmont to Rivesville, W. Va.

W. Va., Lumberport.—An officer of the Baltimore & Ohio Railroad says that nothing is being done at present for a connection between the Monongahela line and the Short Line near Lumberport and Gypsy. This denies a recent press report which said that the improvement would include a bridge over the West Fork and yards at Gypsy. A. M. Kinsman is chief engineer at Baltimore, Md.

W. Va., Pemberton.—The Virginian Railway has completed its line from Loop Junction to Pemberton, six miles.

W. Va., Richwood.—An officer of the Chesapeake & Ohio Railway writes that the company does not contemplate building this year an extension along Gauley River to Meadow River. This refers to a recent press report.

W. Va., Clarksburg.—The Fairmont & Clarksburg Traction Co., according to a dispatch, will build an electric railway extension from Clarksburg to Weston, W. Va., 30 miles, the plan having been financed. It will reach Mount Clare, Lost Creek, Janelew and other points. George T. Watson is general manager at Fairmont, W. Va.

W. Va., Welch.—A dispatch says that the Norfolk & Western Railway proposes to build a branch into Wise county, Virginia, to open up coal and timber lands. C. S. Churchill is chief engineer at Roanoke, Va.

STREET RAILWAYS

Fla., Pensacola.—A dispatch says that the City Council has refused a street-railway franchise requested by the Beach Haven Construction Co.

Ga., Atlanta.—The Georgia Railway & Electric Co. contemplates building some new connecting line and extensions. P. S. Arkwright is president.

Okla., Altus.—Harry Bradford of El Reno, Okla., it is reported, contemplates building an electric street railway in Altus, and has made a proposition to the city.

Tex., San Marcos.—C. L. Hopkins, cashier of the State Bank & Trust Co., has applied for a franchise for a syndicate to build a street railway.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers' Record has received during the week the following particulars as to machinery and supplies wanted.

Abattoir Equipment.—South Atlantic Packing & Provision Co., W. S. Godley, president, Savannah, Ga., will want abattoir equipment.

Air Compressor.—A. R. Gilchrist, City Engineer, Montgomery, Ala., wants prices on small portable air compressor, with boiler; approximately 200 cubic feet to test wells.

Aluminum.—H. A. Smith, Gurley, Ala., wants aluminum metal.

Asphalt, etc.—Valley Turnpike Co., D. B. Dinges, secretary, Vaucluse, Va., wants prices on binding material or asphalt.

Bakery Equipment.—H. W. James, Allapaha, Ga., wants information and prices on bakery equipment.

Boilers.—See "Sugar Mill."

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Boiler.—Lexington Crushed Stone Co., Culley Crews, president, Trust company Bldg., Lexington, Ky., wants prices on boilers.

Boiler.—Jones Hay Press Co., B. F. Daugherty, manager, Stamford, Tex., wants prices on 30-horse-power boiler.

Bolts and Washers.—Byington Machine Works, W. C. Byington, president, Tyler-town, Miss., wants prices on bolts and washers.

Boiler Makers.—Arthur Pennell, engineer of Atmospheric Condensation Co., Heist Bldg., Kansas City, Mo., wants to correspond with boiler makers relative to manufacture of equipment for making hard water suitable for boiler feed.

Box Machinery.—L. N. Clarkston, Olinger, Va., wants prices on box machinery.

Brazing Machinery.—See "Welding Equipment."

Bricks and Lumber.—Holderness, Otis & Lee, Stamford, Tex., want prices on lumber and brick for \$89,000 school building.

Brick-kiln Equipment.—See "Piping, etc."

Bridge Construction.—Board of Public Works, H. F. Van Dusen, chairman, Chattanooga, Tenn., will open bids March 1 for repairing metal work and renewing timber floor of two 120-foot truss spans of McCallie Ave. bridge over rights of way of Cincinnati Southern and Western & Atlantic Railroads; plans and specifications furnished on application to Robert Hooke, City Engineer; certified check, \$500, payable to W. B. Cleage, City Treasurer.

Bridge Construction.—City of Bristol, Va., J. W. Mort, chairman of Street Committee, will open bids March 1 for construction of concrete-arch bridge across Beaver Creek.

Broom Machinery.—L. N. Clarkston, Olinger, Va., wants prices on broom machinery.

Broom Machinery.—G. R. Coverston, Glade Spring, Va., wants catalogues and prices on broom machinery; also on broom-handle machinery.

Broom Machinery, etc.—S. E. Driscoll, Shiro, Tex., R. R. No. 1, wants to correspond with manufacturers of broom machinery; also wants prices on broomhandles, etc.

Broom Machinery.—Clinch Valley Broom Works, J. H. Lockhart, Honaker, Va., wants information and prices on broom machinery and materials.

Building Materials.—Zahn-Swan Company, Oklahoma City, Okla., wants prices on building materials for 10-story steel and concrete structure.

Canning Machinery.—L. N. Clarkston, Olinger, Va., wants prices on canning machinery.

Cars.—See "Railway Equipment."

Cans.—Cohutta Talc Co., Dalton, Ga., wants samples and prices of talcum-powder cans.

Cars.—Arkansas, Oklahoma & Western

Railroad, W. A. Felker, president, Rogers, Ark., wants prices on 12-yard air-dump cars. Ceiling.—Joe Schad, Wilmington, N. C., wants 100,000 feet $\frac{1}{2}$ -inch ceiling.

Cement.—Bids will be received until March 14 at U. S. Engineer Office, 929 17th St. N. W., Washington, D. C., for furnishing and delivering building stone and Portland cement in Potomac Park; information on application, Jay J. Morrow, Major, Engineers.

Cistern Construction.—Capt. H. B. Chamberlin, Quartermaster U. S. Army, Constructing Quartermaster, Fort Morgan, Ala., will open bids March 7 for construction of three reinforced concrete cisterns, one 30,000-gallon and two 8500-gallon capacity; plans, specifications, blank proposals and further information furnished on application; deposit of \$5 required for drawings and specifications loaned; plans and specifications on file in above office.

Clothing.—Martin Lopez & Co., P. O. Box 118, San German, Porto Rico, want list of American manufacturers and jobbers of men's and boys' ready-made clothing.

Concrete Silos.—Rawson & Griebenow Company, Withee, Wis., wants information and literature on forms for building concrete silos.

Corrugated or Galvanized Iron.—J. H. Minnis, care of Montgomery Fair, Montgomery, Ala., wants corrugated or galvanized iron, cut and fitted to order, ready for erection, for building large barn or stable.

Crane.—Pennsylvania Equipment Co., 1209 West End Trust Bldg., Broad St. and South Penn Square, Philadelphia, Pa., wants self-propelling locomotive or wrecking crane, 20 to 50 tons capacity.

Crane.—John MacD. Greene, 267 Drexel Bldg., Philadelphia, Pa., wants second-hand self-propelled locomotive crane of 10 tons capacity, equipped for handling clamshell bucket.

Cranes.—Nashville Bridge Co., Nashville, Tenn., wants electric traveling cranes, 75 feet span, 5 and 10 tons capacity.

Cranes.—Missouri, Kansas & Texas Railway system, A. A. Allen, general manager, St. Louis, Mo., is preparing to purchase three locomotive cranes.

Creamery Machinery.—W. S. McKay, Ravenswood, W. Va., wants addresses of manufacturers of creamery equipment; refrigerating machinery and small ice plant included; capacity, 1500 cows.

Crusher.—Lexington Crushed Stone Co., Culley Crews, president, Trust Company Bldg., Lexington, Ky., wants prices on stone crusher.

Desiccating Machinery.—Chas. R. East, Brooklyn, N. Y., wants addresses of manufacturers of machinery for desiccating shelled coconuts.

Doors.—Joe Schad, Wilmington, N. C., wants 300 doors $1\frac{1}{8}$ inches thick.

Drainage.—Supervisors of Blackwater Drainage District No. 1 of Johnson county, Warrensburg, Mo., will open bids March 10 for clearing right of way and excavating main ditch, straightening Blackwater Creek and containing about 1,000,000 cubic yards of earth, and laterals and small ditches containing 225,000 cubic yards of earth; plans and specifications on file in office of Robert T. Grover, deputy secretary; contract to be let in five sections, and contractors may bid on one or all of sections; minute description of sections on file with secretary; certified check to accompany bids, \$500; bids received to complete work in 12 months and also in 18 months.

Dredging.—U. S. Engineer Office, Savannah, Ga., Proposals for dredging in Club and Plantation creeks, Georgia, will be received until March 9; information on application; Dan C. Kingman, Colonel, Engineers.

Dredging Machinery.—J. L. Durland, chief engineer Southern Pacific Terminal Co., Galveston, Tex., wants list of manufacturers of hydraulic dredging equipment (complete outfit).

Electric Motor.—Cumberland Valley Paper Box Co., C. P. Hench, president, Hagerstown, Md., wants to correspond relative to boilers and engines.

Engines and Boilers.—Cumberland Valley Paper Box Co., C. P. Hench, president, Hagerstown, Md., wants commission prices on steam engines and boilers.

Fire-brick.—Simon Levy, care of Gaslight Coal & Coke Co., Oakman, Ala., wants full information relative to manufacture of fire-brick.

Fire-alarm System.—City of Texarkana, Ark., will purchase electric fire-alarm system. Address The Mayor.

Flooring.—Joe Schad, Wilmington, N. C., wants 40,000 feet $\frac{1}{2}$ -inch flooring.

Foundry Equipment.—Jones Hay Press Co., B. F. Daugherty, manager, Stamford, Tex., wants prices on 16, 20 and 36-inch lathes; cupola of 8000 pounds capacity; cold-iron shear, to cut slab one-quarter and one-eighth; two heavy drills, one heavy shaper, universal miller, power hack saw, power hammer, forges, anvils, etc.

Gasoline Engines.—Byington Machine Works, W. C. Byington, president, Tyler-town, Miss., wants commission prices on gasoline engines.

Gasoline Locomotives.—Killian Fire-Brick

complete installation of two 300-kilowatt 60-cycle 300 R. P. M. 600-volt horizontal alternating-current generators to deliver 300 kilowatts true energy at 85 per cent. power factor; two 530-horse-power twin horizontal 300 R. P. M. turbines in open flume to operate under normal head of 32 $\frac{1}{2}$ feet; one 50-kilowatt 120-volt direct-current exciter direct connected to horizontal 76-horse-power single turbine in open flume, governors for above turbines; 50-kilowatt alternating-current direct-connected motor generator; 22 $\frac{1}{2}$ kilowatt motor generator exciter unit; six panel switchboard; 10-ton hand crane; bulkheads, all connections, station wiring, etc., of hydro-electric plant at Speigner, Ala. Detail plans and specifications can be seen at Engineering Association of South clubroom, Board of Trade Bldg., Birmingham, Ala., or at office of Edgar B. Kay, engineer, University, Ala.

Electrical Equipment.—Zahn-Swan Company, Oklahoma City, Okla., wants prices on electrical equipment for 10-story steel and concrete building.

Electrical Equipment.—Valley Park Ice & Supply Co., Robert Sargent, president, Valley Park, Mo., wants prices on electrical equipment.

Electrical Machinery.—Box 212, Newnan, Ga., wants two to three horse-power second hand motor, alternating current, 208 volts, 60-cycle, single phase.

Electrical Machinery.—People's Ice Co., R. J. Sugar, vice-president, Monroe, La., wants prices on equipment for electric-light plant; city lighting.

Electrical Work.—See "Bank and Office Buildings" under Tex., Amarillo.

Electrical Material.—Bids will be received at office of General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until February 25 for furnishing electrical material, including fixtures, fittings, cable, wire, line material, conduit, etc. Blanks and general information relating to Circular No. 562 may be obtained at above office or office of assistant purchasing agents, 21 State St., New York; 55 National Realty Bldg., New Orleans; 1086 North Point St., San Francisco, Cal.; also from U. S. Engineer office in following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, St. Paul, Detroit, Milwaukee, Chicago, St. Louis, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City; Chamber of Commerce and Board of Trade, Tacoma, Wash.; F. C. Boggs, Captain, Corps of Engineers, U. S. A., General Purchasing Officer.

Engine.—Carrollton Electric Co., Carrollton, Ga., wants 25-horse-power four-valve simple or compound Erie, Ball or Harrisburg engine; second-hand.

Engine.—Hobbs-Ives Equipment & Machinery Co., Norfolk, Va., wants second-hand 15-horse-power steam engine for sawmill.

Engines.—See "Sugar Mill."

Engine.—Reynoldsburg Silica Co., Reynoldsburg, Ohio, wants second-hand 100 to 150-horse-power Corliss engine.

Engine.—Lexington Crushed Stone Co., Culley Crews, president, Trust Company Bldg., Lexington, Ky., wants prices on engines.

Engines and Boilers.—Cumberland Valley Paper Box Co., C. P. Hench, president, Hagerstown, Md., wants to correspond relative to boilers and engines.

Engines and Boilers.—Byington Machine Works, W. C. Byington, president, Tyler-town, Miss., wants commission prices on steam engines and boilers.

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Gasoline Engines.—Byington Machine Works, W. C. Byington, president, Tyler-town, Miss., wants commission prices on gasoline engines.

Gasoline Locomotives.—Killian Fire-Brick

Co., Killian, S. C., wants to correspond with manufacturers of gasoline locomotives for small industrial railways.

Gasoline Motor.—H. A. Smith, Gurley, Ala., wants water-cooled gasoline motor.

Gears.—J. J. Wilson, Bailey, N. C., wants one pair mitre gears, one iron and one mortise, about 35 cogs; 1½-inch pitch; 3-inch face; bored and key-seated for 1 15-16-inch iron shaft; one pulley, 30-inch diameter, 12-inch face; bored and key-seated to 1 15-16-inch shaft.

Glass Front.—D. H. Laney, Chesterfield, S. C., wants prices on plate-glass store front; 24x12 feet front.

Grate Bars.—Capital City Laundry and Dye Works, 726 Main St., Columbia, S. C., wants prices on hollow or blast grate bars.

Handle Machinery.—See "Broom Machinery."

Handles.—See "Broom Machinery, etc."

Heating Apparatus.—See "Government and State Buildings" under Ky., Lexington.

Heating Plant.—See "Bank and Office Buildings" under Tex., Amarillo.

Hoisting Engine, etc.—Bids will be received at office of General Purchasing Officer Isthmian Canal Commission, Washington, D. C., until March 7 for furnishing hoisting engine, capstans and engine, pumps, boring machine, steel castings, dipper balls, boring machine, steel castings, dipper balls, gear cutters, milling tools, slitting saws, etc.; blanks and general information relating to circular No. 561 may be obtained at above office or office of assistant purchasing agents, 24 State St., New York; 55 National Realty Bldg., New Orleans; 1086 N. Point St., San Francisco, Cal.; also from U. S. Engineer Office in following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, St. Paul, Detroit, Milwaukee, Chicago, St. Louis, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City; Chamber of Commerce, Quincy, Ill., and Chamber of Commerce and Board of Trade, Tacoma, Wash.; F. C. Boggs, Captain Corps of Engineers, U. S. A., General Purchasing Officer.

House, Packing, etc.—Bids will be received at office of General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until March 14 for furnishing hose, packing, gaskets and rubber belting (annual estimate for period ending June 30, 1911). Blanks and general information relating to Circular No. 563 may be obtained at above office or office of assistant purchasing agents, 24 State St., New York; 55 National Realty Bldg., New Orleans; 1086 North Point St., San Francisco, Cal.; also from U. S. Engineer Office in following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, St. Paul, Detroit, Milwaukee, Chicago, St. Louis, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City; Chamber of Commerce, Quincy, Ill., and Chamber of Commerce and Board of Trade, Tacoma, Wash.; F. C. Boggs, Captain Corps of Engineers, U. S. A., General Purchasing Officer.

Hydraulic Machinery.—See "Dredging Machinery."

Ice and Refrigerating Machinery.—W. S. McKay, Ravenswood, W. Va., wants prices on small ice plant and refrigerating machines. (See "Creamery Machinery.")

Ice Machinery.—G. Lloyd Preacher, Augusta, Ga., wants prices on one and two-ton ice plants; operated by gasoline engine or electric motor.

Ice and Cold Storage Machinery.—Romney Creamery Co., Romney, W. Va., wants prices on two-ton ice machine and storage plant.

Iron and Steel Manufacturers.—Albert C. Kelly, care of Morris Lumber Co., Slocomb, Ala., wants to correspond relative to placing contract for manufacture of patented malleable iron or steel car replacer.

Inclinator.—Sealed proposals for construction of inclinating plant of 25 tons capacity for burning garbage, refuse and dead animals, including a fireproof building, will be received by Council Committee on Sanitation and Street Cleaning at City Engineer's office, Lynchburg, Va., until February 28; each bid to be accompanied by certified check for sum equal to 10 per cent. of amount bid, payable to A. L. Wilson, chairman Committee on Sanitation and Street Cleaning; check returned to bidder unless he fails to execute contract should it be awarded him; a bond for 75 per cent. of amount bid required for faithful performance of contract; surety to be satisfactory to committee; general specifications and other information can be obtained at office of H. L. Shaner, City Engineer.

Irrigation Machinery.—Herradura Fruit

and Vegetable Growers' Association, E. W. Halstead, secretary, Province Pinar del Rio, Herradura, Cuba, wants data and prices on machinery for conveying water from lagoon, river, shallow or deep wells for irrigation; wants complete particulars, including catalogues, plans, prices f. o. b. Havana, etc.

Iron and Steel.—Byington Machine Works, W. C. Byington, president, Tylertown, Miss., wants prices on iron and steel, flat or round.

Laundry Machinery.—E. R. Haynes, Easley, S. C., will want laundry machinery.

Locomotives.—See "Gasoline Locomotives."

Locomotives.—John MacD. Greene, 267 Drexel Bldg., Philadelphia, Pa., wants locomotive (Vulcan or Davenport preferred); four-wheel saddle tank; 36-inch gauge, 9-inch by 14-inch; also, 10-inch by 16-inch 36-inch-gauge saddle-tank locomotive; both second-hand.

Lumber.—L. K. Cone, Tulsa, Okla., wants prices on lumber.

Lumber.—Langhorn & Waugh, Scottsville, Va., wants prices on 2-inch No. 1 white oak for rebuilding dump cars; to be shipped to Silver Grove, Ky.

Machine Tools.—Southern Equipment Co., 19 Young St., Houston, Tex., wants double spindle lathe, to take about 12 feet between centers; engine lathe, about 26-inch by 12-foot; 24-inch double-gear shaper.

Merry-Go-Round.—R. A. Rozier, Panama City, Fla., wants prices on merry-go-round, complete, with track.

Oil Furnaces.—Clarence Cosby, Richmond, Va., wants information on fuel-oil furnaces.

Oil Mill.—Farmers' Cotton Oil Co., W. P. Newton, president, Dothan, Ala., invites bids on two or three-press oil-mill machinery and power equipment.

Paving.—F. P. Hicks, town clerk, Dustin, Okla., will open bids February 21 for construction of sidewalks along certain streets; plans and specifications on file.

Paving.—Oklahoma City, Okla., will close bids March 7 on construction of 262,215 square yards (15.78 miles) sheet-asphalt paving; W. C. Burke, City Engineer; Bob Parman, City Clerk.

Paving.—See "Water-distributing System, etc."

Paving.—J. H. Hicks, Mayor, Clarksville, Ga., will receive bids until March 4 on grading and building about three miles Chattoochee brick or concrete sidewalk. City will also award separate contract for about one mile of new street, with grading; information on application to Mayor.

Paving.—Robert Tait, City Treasurer, Montgomery, Ala., will open bids March 7 for paving roadway of Bob St. from Mouton to Wilkerson St. with asphalt, bitulithic, brick, Blome granitoid, mineral rubber or wood block, together with necessary curbing, headers, storm-water sewer, etc.; also for paving portion of Lee St. from Tallapoosa St. to property of Louisville & Nashville Railroad with asphalt or mineral rubber, together with necessary curbing, headers, storm-water sewers, etc.; paving of side walks on both sides of Lee St. from Tallapoosa St. to property of Louisville & Nashville Railroad, together with granite curbing, storm sewers, brick walls, etc.; each street to be bid on separately; plans, profiles and specifications on file in office of City Engineer; certified check as shown in specifications to accompany each bid.

Paving.—Joe Baker, Mayor, and City Council, Dothan, Ala., will open bids March 7 for laying 18,500 square yards pavement; bids invited on wood blocks, brick, bitulithic and asphalt; certified check, \$2000; plans may be seen at office of R. W. Lisenby, City Clerk, or J. B. McCrary & Co., 1311-15 Empire Bldg., Atlanta, Ga., and copies of specifications, forms, etc., may be obtained from either;

Paper Mill.—S. Byer, Brinkley, Ark., wants addresses of companies installing paper mills.

City will also open bids at same time on 7000 linear feet of granite curbing. (Lately mentioned; additional data in this proposal.)

Paving.—Board of Control, Lynchburg, Va., will open bids February 22 for improvement of Cabell St., between First and Rivermont Aves.; bids to be made on blank forms furnished by H. L. Shaner, city engineer; certified check, \$1000; plans can be seen and specifications and proposal forms obtained at office of city engineer.

Piano-factory Equipment.—Davis Piano & Player Manufacturing Co., J. W. Davis, president, Birmingham, Ala., will need piano-factory equipment in 60 days.

Piping.—Dorchester Lumber Co., Badham, S. C., wants 20 feet eight-inch steam pipe, 600 feet six-inch steam pipe and 200 feet five-inch steam pipe.

Piping, etc.—Sabin & Morrison, Branch-

ville, S. C., want piping and other equipment for brick dry kiln of 20x50 inside measurement.

Piping, etc.—Byington Machine Works, W. C. Byington, president, Tylertown, Miss., wants prices on piping and fittings.

Planer.—John MacD. Greene, 267 Drexel Bldg., Philadelphia, Pa., wants second-hand open-side planer, complete; 72x22 feet long; (Deitrick & Harvey preferred).

Plate Glass.—L. K. Cone, Tulsa, Okla., wants prices on plate glass.

Plaster and Terra-cotta.—Contractors invited to bid on plaster and terra-cotta work on Cathedral of St. John the Baptist, Savannah, Ga.; plans and specifications can be seen at office of J. de Bruyn Kops, architect, Savannah; bids will be opened February 21; certified check for \$200. (Date postponed from February 14, as lately stated.)

Plumbing.—Bids will be received at office of Capt. Frank B. Edwards, Constructing Quartermaster, Fort Myer, Virginia, until March 12 for remodeling plumbing in cavalry barracks, buildings Nos. 53 and 54; certified check or surety company's guarantee for 10 per cent. of amount to accompany each bid; plans and specifications furnished on application.

Plumbing.—Zahn-Swan Company, Oklahoma City, Okla., wants prices on plumbing equipment for 10-story steel and concrete building.

Plumbing and Gasiping.—See "Government and State Buildings" under Ky., Lexington.

Power Equipment.—See "Oil Mill."

Pump.—Hobbs-Ives Equipment & Machinery Co., Norfolk, Va., wants price on underwriters' steam pump for fire protection; second-hand; 500-gallons-per-minute capacity; give full description.

Pump.—Valley Park Ice & Supply Co., Robert Sargent, president, Valley Park, Mo., wants prices on deep-well pump.

Rails.—Jackson Lumber Co., Sumter, S. C., wants about three and a half miles 25 or 30 pound relaying rails.

Rails.—R. K. Papin, 654 Pierce Bldg., St. Louis, Mo., wants three miles 52 or 56-pound relayers, with angle bars, delivered Randolph, La.; also one mile 52 or 56-pound relayers, delivered Little Rock, Ark.; subject to Hunt's or American Bureau's inspection.

Railway Equipment.—Missouri, Kansas & Texas Railway system, A. A. Allen, general manager, St. Louis, Mo., is preparing to purchase 5 10-wheel passenger engines, 10 Pacific type passenger engines; 20 consolidated freight engines, 105 tons; 20 Standard Mogul freight engines, 10 switch engines, 15 coaches, 15 chair cars, 5 standard 60-foot postal cars, 6 combination mail and coach (30-foot mail com.); 10 baggage cars, 70-foot length; 5 dining cars, 100 box cars, 300 furniture cars, 200 automatic cars, 500 coal cars, 100 steel under-frame flat cars, 75 side-dump cars, 50 standard cabooses, 3 locomotive cranes, 1 steel wrecker and 1 spreader.

Reinforcing Material.—Holderness, Otis & Lee, Stamford, Tex., want prices on reinforcing material for \$89,000 school building.

Road Construction.—E. J. De Vane, chairman Board of Hillsboro County Commissioners, Tampa, Fla., will open bids March 1 for hard-surfacing 4½ miles of Ozona Rd., beginning at Moccasin Branch and extending to and connecting with Ozona and Dunedin Rd.; paving to be 12 feet wide; first two miles at east end to be paved with shell 10 inches deep when packed; balance with phosphate screening 6 inches deep when packed.

Road Construction.—Hillsboro County Commissioners, E. J. De Vane, chairman, Tampa, Fla., will open bids March 1 for hard-surfacing of about ½ mile of road, Brandon Station to Rock road; material, Wilder pit clay macadam, 15 feet wide, 8 inches in the center and 5 inches on sides when packed; also separate bid for same piece of road; material to be one-half of depth Wilder pit clay and surface half phosphate screenings, 15 feet wide, 8 inches in center and 5 inches on sides when packed.

Road Construction.—Board of Trustees for Putnam County bonds, S. Worden, clerk, 722 Water St., Palatka, Fla., will open bids March 5 for construction of hard-surfaced roads as follows: Palatka, Fla., to Bostwick, Fla., 12 miles; Francis, Fla., to Keuka, Fla., 12 miles; San Mateo, Fla., to, and including both approaches to, Dunne's Creek bridge, four miles; prospective bidders will obtain plans and specifications upon application to R. F. Ensey, County Engineer, Palatka.

Road Construction.—Davis Piano & Player Manufacturing Co., J. W. Davis, president, Birmingham, Ala., will need piano-factory equipment in 60 days.

Roping.—Dorchester Lumber Co., Badham, S. C., wants 20 feet eight-inch steam pipe, 600 feet six-inch steam pipe and 200 feet five-inch steam pipe.

Roofing Machinery.—R. H. Bethel, Charlotte, N. C., wants roofing machinery.

Safe, etc.—Avera Banking Co., L. B. Holt,

president, Avera, Ga., wants prices on safe, vault and bank fixtures.

Sash Clamp.—Frank Wright, Cave Springs, Ga., wants sash clamp.

Sash, etc.—L. K. Cone, Tulsa, Okla., wants prices on sash and doors.

Saw.—Frank Wright, Cave Springs, Ga., wants foot-treadle cut-off saw.

Sawmill Supplies, etc.—Byington Machine Works, W. C. Byington, president, Tylertown, Miss., wants prices on sawmill, timbermen's supplies and saws of all kinds; also commission prices on tools for sawmill and loggers.

Sewer Construction.—R. H. Rowe, Mayor, and City Council, Madison, Fla., will receive bids until March 16 for construction of sanitary-sewer system; work will consist of six miles of pipe sewers from 6 to 15 inches diameter, and disposal plant complete; certified check, \$1000; plans and specifications on file with S. P. Griffin, Town Clerk, and specifications will be mailed upon application to H. S. Jaudon, engineer, P. O. Box 582, Savannah, Ga.

Sewer Construction.—H. M. Ringo, City Clerk, Mt. Sterling, Ky., will receive bids until March 1 for constructing 9½ miles of sewers varying in size from 6 to 24 inches, together with manholes, lampholes, flush tanks, etc., and reinforced concrete septic tank. Specifications, instructions to bidders and blank forms of bidding sheets may be obtained and plans and profiles seen at office of R. G. Kern, Mt. Sterling, or office of Chas. E. Collins, consulting engineer, Drexel Bldg., Philadelphia, Pa.; W. A. Samuels, Mayor.

Sewer Construction.—See "Water-distributing System, etc."

Sewer Construction.—Proposals for construction of Section "A" Castlewood sewer, contract No. 61, will be received at office of Commissioners of Sewerage (P. L. Atherton, chairman, and J. B. F. Breed, chief engineer), 605 Equitable Bldg., Louisville, Ky., until March 4; work consists mainly of constructing 3591 feet of concrete sewer, diameters 39 to 66 inches, and 930 feet of 29-inch vitrified pipe, including 4521 feet of earth excavation and 1500 cubic yards rock, average cut 11.8 feet; 1440 cubic yards of concrete and 2700 square yards vitrified-brick paving. Plans and specifications may be seen at office of Commissioners and of Harrison P. Eddy, consulting engineer, 14 Beacon St., Boston, Mass.; each bid to be accompanied by certified check for 7 per cent. of total amount of bid or a "bidder's bond," as described in form of proposal.

Shafting and Pulleys.—See "Gears."

Shingles.—Joe Schad, Wilmington, N. C., wants 140,000 No. 1 shingles.

Shoe-repairing Machinery.—W. S. McKay, Ravenswood, W. Va., wants addresses of manufacturers of shoe-repairing machines.

Shuttle-block Machinery.—See "Woodworking Machinery."

Skidder.—Benj. G. Estes, care of New York & North Carolina Land & Lumber Co., Greenville, N. C., wants skidder for mountain logging.

Smoke Consumers.—James H. Wood, Asheville, N. C., wants information relative to smoke-consuming devices.

Stave Machinery.—A. Dennis Williams, Marlinton, W. Va., wants stave-making machinery.

Stave Mills.—Friedlaender & Oliven Co., Box 1728, New Orleans, La., wants quotations on portable stave mills.

Steam Traps.—Capital City Laundry and Dye Works, 726 Main St., Columbia, S. C., wants prices on return-trap system for different machines and dry-rooms.

Steel, Forgings, etc.—U. S. Engineer Office, Wheeling, W. Va. Proposals for furnishing and delivering structural steel, forgings, bolts, etc., for dams Nos. 8 and 11, Ohio River, will be received until February 28; information on application; F. W. Altstaetter, Captain, Engineers.

Steel Stand-pipe.—W. H. Bartlett, Mayor, Boaz, Ala., wants prices on steel standpipe, 80 feet high, 60,000 to 75,000 gallons capacity.

Steel.—See "Iron and Steel."

Stone.—See "Cement."

Structural Iron.—Holderness, Otis & Lee, Stamford, Tex., want prices on structural iron for \$89,000 school building.

Sugar Mill, etc.—Youngsville Louisiana Cane Syrup Co., Dr. Roy O. Young, president, Youngsville, La., wants prices on boilers, pumps, tanks, magma tanks, 1000-ton mill and attachments, holsts, engines, etc.

Tanks.—See "Sugar Mill."

Telephone Equipment.—Lewis Fork Telephone Co., A. P. Hall, president, Congo, N. C., wants delivered prices on 12 galvanized

B. B. wire, insulators and brackets; also prices on rural phones, 5 bars, 3 batteries, 200-ohm ringer.

Ties.—Denver & Gulf Railroad Co., W. R. Evans, vice-president, Texoma, Okla., wants prices on ties.

Time-keeping Apparatus.—Atlantic Furniture & Lumber Co., Lineville, Ala., wants simple and inexpensive method of keeping employees' time in woodworking plant.

Trucks.—Sabin & Morrison, Branchville, S. C., want 40 or 50 new or second-hand dry-kiln trucks.

Water-distributing System, etc.—Capt. P. Whitworth, Quartermaster, U. S. Army, Fort Crockett, Galveston, Tex., will open bids March 7 for constructing water-distributing system, brick road, cement walks and storm sewers at Fort Crockett; information on application; separate proposals to be submitted.

Water-wheel.—Edwin A. Zimmerman, New Freedom, Pa., wants new or second-hand steel ball-bearing water-wheel; 20 feet high and three feet or over wide; delivery at Shrewsbury, Pa.

Water-works.—Proposals for laying water mains on Cherry St. from Glass Bayou to Finney St. (36 blocks), Harris St. from Cherry to Drummon St. (1 block), Drummon St. from Harris St. to Bowmar Ave. (4 blocks), and on Walnut St. from 1st East to South Madison St. (9 blocks), will be re-

ceived by J. J. Hayes, Mayor, and Aldermen, Vicksburg, Miss., March 7; plans and specifications to be had on application to C. R. Twiss, City Engineer; separate bids to be made on each street.

Water-works Construction.—M. W. Prock, secretary Commercial Club, Hollis, Okla., invites correspondence relative to installation of water-works.

Well-drilling Machinery.—Martin Lopez & Co., San German, Porto Rico, wants data, prices, discounts, etc., of well-boring machinery operated by hand-power.

Welding Equipment.—District Machine Works, 3204-6 K St. N. W., Washington, D. C., wants addresses of manufacturers of equipment for welding or brazing seamless tank by means of acetylene blast or similar process.

Wire.—Port Lavaca Telephone Co., Port Lavaca, Tex., in market for 2300 pounds No. 12 B. & S. hard-drawn copper wire.

Woodworking Machinery.—D. A. Burwell, Stovall, N. C., wants lathe for turning large columns up to 14 feet long; also boring machine to bore column centers.

Woodworking Machinery.—W. B. Safford, Natchitoches, La., wants to correspond with manufacturers of machinery for veneering and shuttle-block plants.

Woodworking Machinery.—C. H. Stevens, Tylertown, Miss., wants prices on general woodworking machinery.

W. Dunning, T. De Witt Cuyler, George Harvey, William A. Nash, Edward T. Perine, Frank C. Richardson, Cornelius Vanderbilt, John L. Waterbury, George W. Young. The company's home office is at 165 Broadway, New York, with branch offices in some of the large cities.

The Galveston Concrete Causeway.

Increasing interest attaches to the Galveston causeway, a concrete engineering work of great importance, designed to connect the city of Galveston with the mainland. This work was planned by and the construction is under the supervision of the Concrete-Steel Engineering Co., Park Row Bldg., New York. The A. M. Blodgett Construction Co., Kansas City, was awarded contracts last summer for the roadway and concrete arches, and has eight piers in progress, two being completed above high-water mark. The causeway will be 10,612 feet long, while the arched-bridge portion will be 2472 feet and the roadway or embankment 8170 feet. There will be a lift drawbridge, erected by the Pennsylvania Bridge Co. of Beaver Falls, Pa., with a clear span of 100 feet. The bridge will be 44 feet wide, of which 27 feet will be devoted to standard-gauge railway tracks and 17 feet to an electric interurban railway and county highway. The arched part of the viaduct will be 65 feet wide, 29 feet being for steam railway tracks, 15 feet for the interurban tracks and 21 feet for the highway and water mains. The top of the embankment section will be 110 feet wide, 50 feet being reserved for the steam railways, 27 feet for the interurban tracks and 43 feet for the highway. The rails will be about 17 feet above average low tide, and the estimated cost of the entire construction is approximately \$1,500,000, exclusive of the approaches from the shore. All this important construction is being engineered, as above stated, by the Concrete-Steel Engineering Co. of New York.

Well-drilling Machinery.—Martin Lopez & Co., San German, Porto Rico, wants data, prices, discounts, etc., of well-boring machinery operated by hand-power.

Welding Equipment.—District Machine Works, 3204-6 K St. N. W., Washington, D. C., wants addresses of manufacturers of equipment for welding or brazing seamless tank by means of acetylene blast or similar process.

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Woodworking Machinery.—W. B. Safford, Natchitoches, La., wants to correspond with manufacturers of machinery for veneering and shuttle-block plants.

Woodworking Machinery.—C. H. Stevens, Tylertown, Miss., wants prices on general woodworking machinery.

W. Dunning, T. De Witt Cuyler, George Harvey, William A. Nash, Edward T. Perine, Frank C. Richardson, Cornelius Vanderbilt, John L. Waterbury, George W. Young. The company's home office is at 165 Broadway, New York, with branch offices in some of the large cities.

the assistance of engineers and contractors, and is illustrated to show, in addition to the municipal work, a line of castings for other purposes. One of the illustrations is that of a fire-escape which is universal in its application, being made in such a way that it is shipped "knocked down" and can be erected by a novice. It is so manufactured that extreme accuracy is unnecessary, and if the drilling for bolts happens to be a little away from what is ordinarily prescribed, the fire-escape will nevertheless fit, and can be adjusted to any reasonable variation. E. N. Burr & Co. have splendid facilities for producing work promptly, and in addition to the municipal work and fire-escapes mentioned they furnish a line of architectural iron work, and are at present engaged in extending their facilities for manufacturing pumping machinery. These products are described and illustrated in the catalogue referred to, which may be obtained upon request.

OBITUARY.

Death of Fayette Brown.

The death of Fayette Brown, which occurred on January 20, has recently been announced. Mr. Brown was in his 87th year, and at the time of his death was president of the Brown Hoisting Machinery Co., whose main office and plant are located at Cleveland, O.

Pneumatic Coal Mining.

A new device has been perfected by Col. Edward O'Toole, general manager of the several operations of the United States Coal & Coke Co. at Gary, W. Va. The new system draws the coal from the working places through a 24-inch pipe to the tipple. To do this powerful suction pumps are placed at the tipple, which produce the required pressure necessary to force the coal through the pipes. The coal is loosened from its solid state within the mines by means of machines, which cut it down, pick it up with a scraper and convey it into the receptacle of the pipe. In this operation no explosives are used, thus making the mining safer. When the coal is discharged from the pipe at the tipple it runs onto pans, which move slowly into the dumping chute and allows sufficient time to pick the impurities from the coal. At a test of this device coal was carried at the rate of 460 pounds per minute during the entire test, and the whole operation was entirely automatic, no manual labor of any kind being necessary in taking the coal from the solid seam and transporting it to the outside.

The Western Electric Co., 463 West St., New York, has issued bulletin No. 5239, which describes in detail its Hawthorn type of "SL" induction motor. The bulletin is illustrated and includes a comprehensive description of all essential parts of the motor. The information it contains should be of interest not only to those who purchase induction motors, but also to those who use them.

TRADE LITERATURE.

Polyphase Induction Motors.

The Western Electric Co., 463 West St., New York, has issued bulletin No. 5239, which describes in detail its Hawthorn type of "SL" induction motor. The bulletin is illustrated and includes a comprehensive description of all essential parts of the motor. The information it contains should be of interest not only to those who purchase induction motors, but also to those who use them.

Irrigation Investments.

"Irrigation Investments" is the subject of a pamphlet prepared by Ira W. McConnell, chief irrigation engineer of J. G. White & Co., Inc., engineers and contractors, 43-49 Exchange Place, New York. This publication is interesting, and presents the view that properly developed irrigated lands have all the advantages possessed by agricultural lands watered by rainfall, and in addition to which they possess in a marked degree the advantages of greater fertility, fewer uncertainties, more rigid control of crops, etc. It advances the proposition that the arid sections of the United States will offer for the next decade a most profitable field for investment, and expresses the opinion that such investments, properly placed, are sound and attractive. As a means of investigating and perfecting such investments, J. G. White & Co. offer the services of their efficient organization, and are prepared to undertake the engineering, construction and management of irrigation enterprises at any stage of their development.

Economic Elevator Service.

In the design of modern stores, warehouses and other business buildings it has been found essential in order to make the upper floor space of value that elevator service be installed. The advantages of such service in the way of prompt and economic handling of goods and the ready availability of all floors of the building are obvious and commend themselves to progressive men. In order to provide such service at small cost the Otis Elevator Co. of New York has perfected a number of different styles of hand-power elevators, which can be purchased from \$5 upward. These elevators are described and illustrated in a folder (MF-5) which will be sent to those interested. Dumbwaiters of various capacities are also described.

E. N. Burr & Co.'s Catalogue.

Engineers engaged in municipal work will find in catalogue No. 12 issued by E. N. Burr & Co. of Champaign, Ill., illustrations of municipal castings of various styles, together with weights, prices and drawings showing dimensions from which specifications can easily be made. This is one of the most complete publications of its kind for

FINANCIAL NEWS

Review of the Baltimore Market.

Office MANUFACTURERS' RECORD.

Baltimore, Md., February 16.

The Baltimore stock market during the past week displayed but little more activity than it did the week before, and generally business was quiet. In the trading United Railways common sold from 13 to 13½; do. trust certificates, 13 to 13½; do. incomes, 58 to 59½; do. funding 5s, 83½ to 82; do. serip, 83½; do. 4s, 86½ to 85½; Consolidated Gas, Electric Light & Power common, 48 to 49; do. preferred, 85½ to 85; Consolidated Gas 6s, 100½; Seaboard Company common, 24 to 23½; do. first preferred, 72½ to 75; do. second preferred, 45 to 44½; Seaboard 4s, stamped, 82½; do. three-year 5s, 99½; do. 10-year 5s, 99½; do. adjustment 5s, 72; Mt. Vernon-Woodberry Cotton Duck 5s, 75 to 74½; G.-B.-S. Brewing Ists, 42 to 41.

Bank stock sold as follows: Citizens', 39; Farmers and Merchants', 48; Mechanics', 28; Merchants', 180; Commercial and Farmers', 79½; Maryland, 24; Bank of Baltimore, 121.

International Trust sold from 147 to 153; Baltimore Trust, 320; Maryland Casualty, 94; Mercantile Trust, 144; Colonial Trust, 22½ to 27½; American Bonding, 76.

Other securities were traded in thus:

Established 1835.
The Merchants National Bank
 South and Water Sts., BALTIMORE, MD.
 DOUGLAS H. THOMAS, President.
 W. M. INGLE, Vice-President and Cashier.
 J. C. WANDS, Asst. Cashier.
 JOHN B. H. DUNN, Asst. Cashier.
 Capital, \$1,500,000
 Surplus and Profits, \$900,000
 Deposits \$12,000,000

Accounts of Banks, Bankers, Corporations and Individuals solicited. We invite correspondence.

JOHN NUVEEN & CO.
 1st Nat. Bank Bldg., CHICAGO

We purchase SCHOOL, COUNTY and MUNICIPAL BONDS. Southern Municipal Bonds a Specialty.
 Write us if you have bonds for sale.

THE FIRST NATIONAL BANK OF KEY WEST, FLA.
 United States Depository and Disbursing Agent.
 Capital \$100,000
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 A general banking business transacted. Special attention given to collections.

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 J. ERNEST SMITH, General Counsel and Vice-President.
 HARRY W. DAVIS, Secretary.

Fully Equipped Department for the Organization of Corporations under advice of Counsel, and for the Registration of Corporations as required by the Delaware Law.
 Represents over 300 Domestic and Foreign Corporations.

The Delaware Corporation Law is Broad, Liberal, Safe and Stable. Granting and annual taxes low.

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Southern Steam Railroad Securities
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F. J. LISMAN & CO.
 Specialists in Steam R. R. Securities
 Members New York Stock Exchange,
 30 Broad Street NEW YORK
 404 Connecticut Mutual Bldg., Hartford.
 Land Title & Trust Bldg., Philadelphia.

CROSS CREEK COAL COMPANY 6% Gold bonds, total issue \$250,000. All have been disposed of to investors and bankers in different parts of the country, including Saco, Maine; Boston, Mass.; Rochester, N. Y.; Westfield, Olean, Fredonia and Buffalo, N. Y.; Franklin, Coudersport, Pittsburgh, Smithport, Shamokin and Port Allegany, Pa.; Columbus, Dayton and Springfield, Ohio; Northfork, Welch and Bluefield, W. Va.; Roanoke, Va.; Nashville, Knoxville, Jasper, Chattanooga and South Pittsburg, Tenn.; Atlanta, Ga.; Lowell, Mass.; East Orange, N. J., and Washington, D. C., until now there are but \$30,000 of them left. These bonds are first lien on 7000 acres of the best coal properties in Tennessee, and \$75,000 of this money is being spent on an up-to-date coal works with a capacity of about 1000 tons a day. Particulars will be furnished from the office, 1006 Mutual Life Building, Buffalo, N. Y. P. S.—A bonus of preferred stock will be given with the bonds.

GEO. M. CLARK
 Auditor and Public Accountant
 Room 315 James Building
 CHATTANOOGA, TENN.

INVESTMENT SECURITIES
 Southern Stocks and Bonds
 Municipal and Corporation
 Cotton Mill Stock a Specialty
 WM. S. GLENN - Broker - SPARTANBURG, S. C.

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OF MARYLAND

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 SUMMERFIELD BALDWIN, Vice-President.
 SAMUEL C. ROWLAND, Vice-President.
 Interest Allowed on Deposits Subject to Check, and Special Rates Made on Time Deposits. Your Business is Solicited.

Capital and Surplus, \$2,500,000
 CHAS. D. FENHAGEN, Secretary and Treasurer.
 WALTER D. FOCKE, Assistant Treasurer.
 HOWARD N. LEEKE, Assistant Secretary.

INTERSTATE AUDIT COMPANY
 729 15th Street N. W., WASHINGTON, D. C.
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1027-1029 Calvert Bldg., BALTIMORE, MD.

All work executed by or under direct supervision of Certified Public Accountants.

Bank of Richmond

Capital and Surplus, \$1,500,000

RICHMOND, VA.

JOHN SKELTON WILLIAMS, President.
 FRED'K E. NOLTING, 1st Vice-President.
 T. K. SANDS, 2d Vice-President and Cashier.
 H. A. WILLIAMS, Assistant Cashier.
 L. D. CRENSHAW, Jr., Trust Officer.

In aiding the development of legitimate business enterprises, this bank believes that it performs a required duty, and to this end offers the services of a live, progressive bank, conservatively managed.

THE BALTIMORE TRUST & GUARANTEE COMPANY

BALTIMORE, MD.

Capital, \$800,000
 Surplus, \$2,100,000

THOS. H. BOWLES, President

Acts as Executor, Administrator, Trustee, Receiver for Firms, Individuals or Corporations.

Receives Deposits subject to Check, and allows Liberal Rates of Interest thereon.

The National Exchange Bank OF BALTIMORE, MD.

Hopkins Place, German and Liberty Sts.
 Capital, \$1,000,000

July 15, 1908. Surplus and Profits, \$671,631.60

OFFICERS:

WALDO NEWCOMER, President.
 SUMMERFIELD BALDWIN, Vice-Pres.
 R. VINTON LANDALE, Cashier.
 WM. J. DELCHER, Asst. Cashier.
 C. G. MORGAN, Asst. Cashier.

Accounts of Mercantile Firms, Corporations, Banks, Bakers and Individuals Invited.

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Jno. M. Miller, Jr., Vice-Pres. and Cashier.

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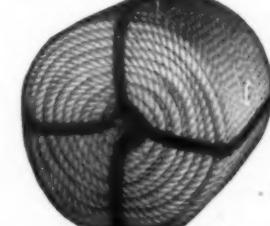
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HARRY NICODEMUS, Secy and Treas. EDWIN WARFIELD, President

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Members:

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MANUFACTURERS' RECORD.

Clabaugh president, T. W. Cochran vice-president, W. C. Rylander cashier; Walter Caldwell assistant cashier; directors, E. C. Clabaugh, W. C. Rylander, Jesse Blair, Jas. E. Ferguson and F. Muchlinhouse.

Tex., Brady.—Reported that the First State Bank & Trust Co. has begun business with W. N. White president and S. S. Graham cashier.

Tex., Eagle Lake.—Official: The Farmers and Merchants' State Bank has applied for charter; capital \$40,000; George Herder, Welmer, Tex., president; H. A. Townsend, Columbus, Tex., first vice-president; B. L. Vineyard, second vice-president, and J. E. Roberts, cashier, both of Eagle Lake; George Herder, Jr., Welmer, Tex., assistant cashier; directors, George Herder, H. A. Townsend, B. L. Vineyard, F. O. Norris, F. L. Dick, George Gegenworth and E. L. Mooney. Business is to begin February 19.

Tex., Houston.—The Houston Loan & Abstract Co. opened for business January 1 with an authorized capital of \$10,000; incorporators and directors, F. M. Gaines, president, and R. L. Gaines, secretary-treasurer, Dothan, Ala.; W. D. Gaines, Lafayette, Ala. The company will lend money, deal in real estate, do a general fire insurance business, etc.

Tex., Paint Rock.—The Guaranty State Bank, capital \$25,000, is reported incorporated by R. F. Trall, J. D. McCollom, Thomas F. Jackson.

Tex., Penn City (P. O. Houston).—The International Bank & Trust Co., capital \$25,000, is reported organized with L. B. Holloway of Waco as president.

Tex., Loving.—Reported that J. W. Spencer, president of the Farmers and Mechanics' National Bank of Fort Worth, and W. A. Shown, president of the Jacksboro National Bank of Jacksboro, are interested in the organization of a State bank. It is said these gentlemen have been operating a private bank.

Tex., Nacogdoches.—Official: The Commercial Guaranty State Bank incorporated; capital \$60,000; E. A. Biount, president; John Schmidt, vice-president, and F. H. Tucker, cashier. Business will begin February 16.

Tex., Temple.—The Cato Investment Co. is reported incorporated with \$150,000 capital by P. L. Downs, Lee Knight and E. F. Zarr.

Tex., Trumbull.—A State bank, capitalized at \$10,000, is reported organized with directors thus: C. A. Weatherford, president; J. H. Smith, vice-president; W. B. Bruce, cashier; L. B. Griffith and Forrest Smith.

Tex., Tyler.—The Guaranty State Bank, capital \$100,000, has begun business with J. D. Shelton cashier.

Tex., Victoria.—The Levi Bank & Trust Co., capital \$200,000, is reported incorporated by G. A. Levi, C. G. Levi and J. K. Hexter.

Va., Nokesville.—Official: The Bank of Nokesville, capital \$25,000, began business February 5 with directors thus: W. T. Allen, president; M. C. Hazen and J. P. Manull, vice-presidents; W. R. Free, Jr., S. H. Hinegardner, W. F. Hale, J. A. Hooker, H. W. Herring, R. J. Wilson, A. H. Green and Floyd W. Davis; W. L. Hanchins, cashier.

Va., Lynchburg.—The Virginia Securities Corporation, capital \$25,000, is reported incorporated with M. K. Duerson president, Walker Pettyjohn secretary and treasurer.

Va., Troutville.—The People's Exchange Bank, capital \$15,000 to \$25,000, is reported incorporated by T. H. Potter of Haymaker town, president; F. W. Bishop of Troutville, vice-president; G. W. Layman of Troutville, secretary and cashier.

W. Va., Montgomery.—A new bank is reported being organized by officers of the National City Bank of Charleston as follows: J. E. Robins, president; A. C. Calderwood and John L. Thornhill, vice-presidents; J. S. Hill, cashier, and G. R. Blake, assistant cashier.

W. Va., Parkersburg.—The Trustee Co., capital \$100,000, is reported incorporated by C. T. Hiteshew, W. W. Walker, W. Vrooman, Edward Neely and R. J. A. Boreman, to do a banking business.

W. Va., Peterstown.—The First National Bank of Peterstown will, it is stated, begin business April 1 with \$25,000 capital; directors, W. H. Ballard, F. F. Fleshman, E. L. Terry and S. Y. Symms. J. E. Hansbarger will be president and O. P. Vines of Hinton cashier.

NEW SECURITIES.

Ala., Montgomery.—An ordinance has been prepared providing for the issuing of \$100,000 of bonds to pay off outstanding indebtedness. Gaston Gunter is Mayor.

Ala., Montgomery.—Reported that the First National Bank of Cleveland, O., has been awarded \$100,000 of bonds at par and accrued interest.

Fla., Key West.—Reported that on April 12 an election will be held to vote on municipal improvement bonds; amount not to exceed \$192,000.

Fla., Punta Gorda.—F. M. Cooper and M. V. Williams, bond trustees, are offering for sale \$750 of public dock and \$4900 of electric-light and water-works bonds.

Fla., Milton.—Reported that an election will soon be held to vote on \$40,000 of water-works, electric-light and sewerage bonds.

Ga., Columbus.—Official: Voted: \$100,000 of 4½ per cent. 30-year bridge bonds; M. M. Moore is City Clerk.

Ga., Shilohman.—Reported that on February 21 city will vote on \$8000 of water-works and \$5000 of school-building bonds.

Ky., Catlettsburg.—Daniel Trap is reported to have been awarded at par and accrued interest \$11,000 of 6 per cent. street-paving bonds.

Ky., Georgetown.—Bids will be received until 7 P. M. February 14 for \$25,000 of 4 per cent. storm-sewer bonds; J. H. Cleary is clerk.

Ky., Hartford.—Official: Bids will be received by James H. Williams, Mayor, until March 10 for \$12,600 of 5½ per cent. 10-20-year sewer bonds.

Ky., Winchester.—J. A. Hughes, Mayor, will receive bids until 2 P. M. February 21 for \$105,000 of 4½ per cent. 20-year bonds.

La., Kentwood.—City Council is reported to have authorized \$30,000 of 5 per cent. 30-year schoolhouse bonds.

La., Baton Rouge.—Reports state that arrangements are being made to float \$60,000 of bonds to repair streets.

Md., Cumberland.—Reported that a bill has been introduced in the City Council providing for \$65,000 of sewer bonds.

Miss., Benoit.—Official: M. M. Thompson, Mayor, is offering at private sale \$10,000 of 6 per cent. water-works bonds; denomination, \$500.

Miss., Crystal Springs.—The Capital National Bank of Jackson is reported to have been awarded \$7000 of 5 per cent. 20-year water improvement bonds at 10%.

Miss., Greenwood.—Official: The Capital National Bank of Jackson, Miss., has purchased \$20,000 of drainage bonds. Gid Montjoy is Mayor.

Miss., Hattiesburg.—Notice is given that on March 1 steps will be taken to issue the following bonds: \$75,000 for school building and \$5000 for paying existing indebtedness. J. D. Donald is Mayor and A. Fairley City Clerk.

Miss., Jackson.—Official: Bids will be received until 4 P. M. March 15 for the following bonds: Water-works extension and improvement, \$35,000; street, \$38,000; sidewalks, \$5000; city hall repairs, \$9000; school improvements, \$30,000; fire station, \$6000; sanitary sewers, \$10,000; storm sewers and bridges, \$5000. A. C. Crowder is Mayor and A. P. Lusk Clerk.

Miss., Lyon.—Arrangements are reported to have been made to issue \$5000 of 20-year water-works bonds, interest not to exceed 6 per cent.

Miss., Macon.—Official: Bids will be opened March 1 for \$12,500 of 5 per cent. 20-year courthouse repair bonds of Noxubee county. Address Board of Supervisors, John A. Tyson, clerk.

Miss., Moss Point.—Official: Bids will be received by the Mayor and Aldermen until 7.30 P. M., March 15, for \$5000 of 6 per cent. school bonds. C. M. Fairley is clerk.

Miss., West Point.—Official: Bids will be opened March 7 for \$40,000 of 5 per cent. 20-year Clay county road and bridge bonds. H. J. Kornegay is County Treasurer.

Miss., Water Valley.—Official: \$10,000 of railroad aid bonds have been authorized, but will not be issued nor sold until certain conditions have been complied with by the proposed new railroad. G. R. Wood is clerk.

Mo., Grant City.—Official: Bids will be received at any time by J. Dawson, City Treasurer, for \$3000 of 5 per cent. 5-20-year street improvement bonds; denomination, \$250.

Mo., Kansas City.—Reports state that it is proposed to vote on the following bonds in April: Water-works, \$1,000,000; parks, \$750,000; city market improvements, \$125,000; tuberculosis hospital, \$20,000; house of correction, \$50,000; sewer, \$100,000; street-repair plant, \$50,000; incinerating plants, \$300,000; levee improvements, \$75,000; fire department improvements, \$125,000; West traffic way, \$350,000; total \$2,845,000.

Mo., Warrensburg.—February 21 \$190,000 of 6 per cent. 20-year drainage bonds will be sold. Address R. J. Grover, Deputy Secretary Blackwater Drainage District No. 1, Warrensburg.

N. C., Albemarle.—Reported that \$20,000 of 5½ per cent. street-improvement and light-plant bonds were recently purchased by the J. B. McRary Company of Atlanta. J. G. Emery is City Clerk.

N. C., Asheville.—Hoeler & Cummings of Toledo, O., are reported to have purchased \$50,000 of 5 per cent. 20-year Buncombe county bridge bonds at \$2018.50 and accrued interest.

N. C., Asheboro.—Reported that an election is to be held March 15 to vote on road bonds.

N. C., Brevard.—W. E. Breeze, Jr., Mayor, writes that contract has been made to sell the \$15,000 of water and sewer and \$5000 of electric-lighting plant 6 per cent. 30-year bonds at a premium of 1 per cent. A press report gives the name of the purchaser as Charles A. Well of Asheville, N. C.

N. C., Burlington.—An election is to be held May 3, it is reported, to vote on \$50,000 of bonds for additional street improvements.

N. C., Fayetteville.—V. C. Bullard, Mayor, writes that city has no bonds, but is offering \$50,000 of 10-year coupon notes.

N. C., Goldsboro.—Reported voted: \$15,000 of road bonds.

N. C., Nashville.—J. B. McRary Co. of Atlanta, Ga., is reported to have been awarded \$10,000 of 4½ per cent. 20-year bonds.

N. C., Jonesboro.—Reported that \$15,000 of road bonds have been voted.

N. C., Sanford.—Reported that \$25,000 of sewerage bonds have been voted.

N. C., Sanford.—Official: \$25,000 of sewerage bonds have been voted and will be offered in a few days. T. L. Chisholm is Mayor and J. D. Gunter, Jr., Clerk.

Okl., Enid.—The election to vote on \$55,000 of municipal improvement bonds is to be held February 23. C. F. Randolph is Mayor and E. R. Lee City Clerk.

Okl., Tulsa.—Arrangements are being made to hold an election, it is reported, to vote on \$305,000 of municipal improvement bonds.

S. C., Columbia.—The House of Representatives is reported to have rejected the bill providing for \$1,000,000 of bonds for hospital for insane.

Tenn., Dickson.—February 28 election will be held to vote on \$20,000 of 30-year bonds for purchase of Dickson Normal College property for use of city's public school. Interest not to exceed 5 per cent.

Tenn., Greene County.—The Greene County Court is reported to have authorized the sale of \$50,000 of road bonds.

Tenn., Huntingdon.—Reported voted: \$10,000 of street, electric-light and water-extension bonds.

Tenn., Memphis.—An official letter confirms the report that bids will be received until February 24 for \$100,000 of 4½ per cent. 25-year bonds in aid of State Normal School for West Tennessee; dated January 1, 1910; denomination, \$1000. Address S. H. Cooper, Wm. Crenan, A. R. Pope, J. P. Young and Lee Thornton, committee of Shelby County Court, at Memphis.

Tenn., Nashville.—Official: Bids will be received by W. L. Murray, City Recorder, until 3 P. M. March 15 for \$300,000 of high-school and \$250,000 of trunk sewer 4½ per cent. 30-year bonds. Further particulars will be found in the advertising columns.

At Macon, Miss., bids will be opened March 1 for \$12,500 of 5½ per cent. 10-20-year sewer bonds. Further particulars will be found in the advertising columns.

At Moss Point, Miss., bids will be received until 7.30 P. M., March 15, for \$5000 of 6 per cent. school bonds.

Further particulars will be found in the advertising columns.

At Nashville, Tenn., bids will be received until 3 P. M., March 15, for \$300,000 of high-school and \$250,000 of trunk sewer 4½ per cent. 30-year bonds. Further particulars will be found in the advertising columns.

Tex., Fort Worth.—An official letter says that \$700,000 of bonds have been authorized.

Tex., Higgins.—Local investors are reported to have purchased at par \$10,000 of 5 per cent. school bonds.

Tex., Midland.—Bids will be received until March 7 by H. B. Dunagan, City Secretary, for \$50,000 of 5 per cent. 10-40-year water-works bonds.

Tex., Port Lavaca.—A \$40,000 courthouse bond issue is reported under consideration.

Tex., China.—The question of holding an election to vote on \$12,000 of school building bonds is reported under consideration.

Tex., Dallas.—S. J. Hay, Mayor, writes that an election is to be held in April to vote on bonds, but so far no definite propositions have been submitted.

Tex., Rhome.—J. B. Bobo, secretary of School Board, will, it is reported, receive bids until April 1 for \$750 of 5 per cent. 10-20-year school-building bonds.

Tex., Stamford.—Reported that bids will be opened February 25 for \$15,000 of 5 per cent. 40-year independent school district bonds. Address G. L. Davenport, president, Stamford Independent School District.

Tex., Orange.—April 5 city will vote on \$15,000 of 40-year street improvement bonds.

Va., Fredericksburg.—Reported that a bill has been introduced in the Legislature providing for \$20,000 of State Normal School bonds.

Va., Norton.—Reported that an election is to be held March 10 to vote on \$35,000 of street, \$20,000 of sewer and \$15,000 of city hall bonds.

Va., Portsmouth.—L. P. Slater, City Clerk, writes that \$150,000 of street-improvement bonds have been authorized by city; date of election not yet decided.

W. Va., Bridgeport.—Bids will be received until March 2 by the City Treasurer, it is reported, for \$2000 of 5 per cent. 20-year school-building bonds.

W. Va., Weston.—An election is to be held March 5 to vote on \$75,000 of 4½ per cent. 10-20-year school bonds; denomination \$500; dated April 1, 1910. A. A. Arnold is president of Weston school district.

At Hartford, Ky., bids will be received until March 10 for \$12,600 of 5½ per cent. 10-20-year sewer bonds. Further particulars will be found in the advertising columns.

At Macon, Miss., bids will be opened March 1 for \$12,500 of 5 per cent. 20-year bonds of Noxubee county. Further particulars will be found in the advertising columns.

At Moss Point, Miss., bids will be received until 7.30 P. M., March 15, for \$5000 of 6 per cent. school bonds.

Further particulars will be found in the advertising columns.

At Nashville, Tenn., bids will be received until 3 P. M., March 15, for \$300,000 of high-school and \$250,000 of trunk sewer 4½ per cent. 30-year bonds. Further particulars will be found in the advertising columns.

FINANCIAL NOTES.

The conversion of the Bank of Putnam at Cookeville, Tenn., into the Cookeville National Bank has been approved; capital \$50,000.

The conversion of the Union Savings Bank of Columbia, S. C., into the Union National Bank of Columbia has been approved; capital \$100,000.

The Continental State Bank of Alto, Tex., is reported to have filed an amendment to its charter, increasing its capital from \$10,000 to \$15,000.

The Louise State Bank of Louise, Tex., is reported, has amended its charter, increasing its capital from \$10,000 to \$20,000.

The Dayton State Bank of Dayton, Tex., it is stated, has filed an amendment to its charter, increasing its capital from \$10,000 to \$20,000.

The Lake Charles Loan & Trust Co., Ltd., of Lake Charles, La., it is reported, proposes to increase its capital from \$50,000 to \$100,000.

The Southern Savings Bank of Wadesboro, N. C., is reported to have established a branch at McFarlan, N. C., in charge of R. E. Lee Northcutt as cashier.

The Farmers' State Bank of Waelder, Tex., it is stated, increase its capital from \$25,000 to \$35,000.

The Texas City State Bank of Texas City, Tex., is reported to have filed an amendment to its charter, increasing its capital from \$10,000 to \$25,000.

The Farmers' State Bank of Waelder, Tex., is reported to have increased its capital from \$25,000 to \$35,000.

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STEPHEN W. WHITE,
Secretary.

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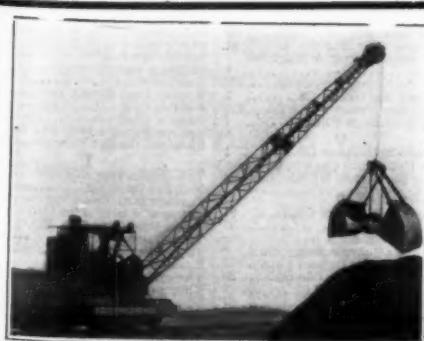
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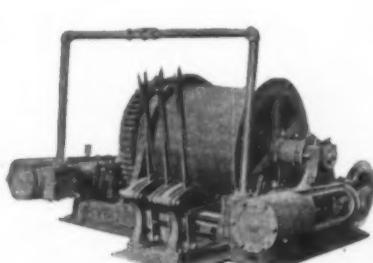
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BOSTON
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MEMPHIS
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ST. LOUIS
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1802
1910

EXPLOSIVES

E. I. DU PONT DE NEMOURS POWDER CO., WILMINGTON, DEL., U.S.A.

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EXPLOSIVES

FOR ALL KINDS OF
Earth, Rock, Tunnel, Mine
and Submarine Work

HIGHEST QUALITY IN EVERY RESPECT AND
STRICTLY AS REPRESENTED

"COLLIER" POWDER

For Use in GASSY add DUSTY MINES. MADE IN VARYING GRADES TO MEET ANY CONDITION OR REQUIREMENT

Packed in pink shells stamped with name and number.
Passed ALL the GOVERNMENT TESTS with a CLEAN SCORE

SEE THEIR REPORT MAY 15, 1909

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W. W. PHILLIPS, 421 Wood St., Pittsburgh, Pa.

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The Only Company Manufacturing in the South
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For Prospecting and Testing.
All Sizes for All Depths of Holes. Send for Catalogue.

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QUINCY SHOWCASE WORKS,
Quincy, Ill.

Classified Opportunities

AGENTS AND SALESMEN WANTED

SALESMEN.—Absolutely the best proposition ever put on the market in South Texas. I want hustlers and think they deserve good pay. I am willing to help you make \$150 per month. If you have had no experience, I will teach you the business free. This is an opportunity to make yourself independent in a few months' work. For literature write H. V. Rakowtraw, 401 McKay Building, San Antonio, Texas.

LIVE-WIRE SALESMEN calling on manufacturers' trade; large profits; small samples; quick sales. Fairfax Refining Co., Cleveland, Ohio.

AGENCY WANTED

WANTED—General agency for Texas for novelties, manufacturers' specialties and patented articles, meritorious and ready sale. Address Texas Novelty Co., Houston, Texas.

TWO young men with energy, ability and experience desire to represent in the Southern States machinery manufacturers of various lines on a salary or commission basis; location in leading Southern port. Address No. 578, care Manufacturers' Record.

WANTED—To communicate with a manufacturer who desires a bonded broker or distributing agent for Kansas and Oklahoma; have good warehouse facilities. Address O. T. Hamilton, Wichita, Kansas.

SITUATIONS WANTED

ADVERTISER desirous of locating South wants position as manager, auditor, accountant, or anything where merit, energy and close application will insure a future; age 40; many years' practical commercial experience; highest references; reasonable salary. Address No. 574, care Manufacturers' Record.

HELP WANTED

WANTED—A first-class stairbuilder of sufficient ability and experience to lay out and bill out stairways from plans and details for a crew of 12 or more stairbuilders. A thoroughly competent man is required, for whose services good wages will be offered. Steady and permanent employment can be secured by a good man who can furnish satisfactory references. Apply at once to Enoch's Lumber & Manufacturing Co., Jackson, Miss.

WANTED—A superintendent for a new store-fixture and showcase factory; must have executive and mechanical ability and come well recommended. Address No. 572, care Manufacturers' Record.

DRAFTSMEN WANTED.—Men familiar with general design of manufacturing plants. Apply Box No. 572, Greenville, S. C.

EDUCATIONAL

RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.—Courses in Civil, Mechanical and Electrical engineering, and General Science, leading to the degrees of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), and Bachelor of Science (B.S.). Special courses in engineering and science. Splendidly equipped new engineering laboratories. Send for catalogues to Registrar.

BANKS

COMMERCIAL STATE BANK, Birmingham, Ala. State depository. Prompt attention to Alabama collections.

THE PALMETTO NATIONAL BANK, Columbia, S. C., capital \$250,000, solicits accounts of banks, firms, corporations and individuals either commercial or savings accounts.

BANK OF ENSLEY, Ensley, Ala., capital \$100,000, surplus and profits \$50,000. Individual responsibility more than a million dollars. Collections made promptly.

TYPEWRITERS

TYPEWRITERS—New, rebuilt and second-hand; all makes at lowest prices and guaranteed. Southern Typewriter & Supply Co., 229 West Fayette street, Baltimore, Md.

BUSINESS OPPORTUNITIES

CASH FOR YOUR BUSINESS OR REAL ESTATE. No matter where located, if you want to buy, sell or exchange any kind of business or property anywhere at any price, address Frank P. Cleveland, Real Estate Expert, 976 Adams Express Building, Chicago, Ill.

INVESTIGATIONS.—If you are considering an industrial or manufacturing investment, or if you own an unprofitable industrial property, better get absolute facts at once. I make technical inspection of plants or properties and thorough investigation of business methods and conditions, rendering confidential report in detail. Write for further information and list of personal references. T. H. Martin, Consulting Engineer, 920 Empire Building, Atlanta, Ga. Reference, Chamber of Commerce, any bank or prominent business house in Atlanta.

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 24 lines. Allow seven words per line. Terms: invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year, as follows: 100 lines, 18c. per line; 300 lines 16c. per line; 500 lines or more, 15c. per line.

GOOD LEAD AND ZINC prospects are in demand. We think we have one and want to sell a half interest at a fair price. Address No. 569, care Manufacturers' Record.

FOR SALE—Controlling interest in a corporation manufacturing a necessity in the Piedmont section of N. C.; good margins and plenty of business; position as manager accompanies interest; good reason for selling. Address No. 576, care Manufacturers' Record.

WANTED—Partner with ten thousand cash and command of fifteen thousand or more additional to take half interest in an established contract business; have large equipment. Correspondence invited. Don't write unless you mean business. Address No. 573, care Manufacturers' Record.

WOULD like to hear of any small electrical plants in Southern States being offered for sale. Address No. 571, care Manufacturers' Record.

FOR SALE—In Newport News, Va., the city of rapid growth, fine brick, sash, door and blind plant, with 14 city lots on C. & O. siding; great sacrifice; fine opening; particulars will interest you; but little competition; 30,000 people to supply. Sommerville Trust Co., Inc., Newport News, Va.

\$25,000 OR MORE to invest with services in a manufacturing business, preferably in Baltimore; highest references furnished and required. Address No. 568, care Manufacturers' Record.

WE CAN GIVE MEN of selling ability an opportunity to sell our apparatus among farmers. The business is very profitable. Davis Acetylene Co., 27 Prospect St., Elkhart, Ind.

INTEREST in well-established and prosperous foundry and machine shop, with large woodworking plant attached, in Southern city, for sale; equipped with new and up-to-date machinery; running on full time; want to retire from active business. Don't write unless you mean business and have money to invest. Best references given and required. Purchase of stock carries control of company. Address No. 561, care Manufacturers' Record.

WANTED—Partner with money; big money to be made in Oklahoma lands, town and city properties. Oklahoma has the soil, the climate, the mineral and the oil. Anyone wanting to engage in a very profitable business will find it to his interest to engage with J. K. Green at Dewey, Okla. Can use \$50,000 to a great advantage just now buying land. Cheap gas and plenty of it at Dewey, Okla.

PATENTS—Send me disclosure of your important invention. I will personally prepare the case. Hubert E. Peck, 629 F St. N. W., Washington, D. C.

WANTED—A man who thoroughly understands selling veneers and oak lumber; one with an established trade preferred; who can invest \$5000; will pay \$150 per month salary and 10% on the money, with good security. Address No. 564, care Manufacturers' Record.

WANTED—A man that thoroughly understands the manufacture of hardwood on a band mill that can invest \$10,000; will pay \$150 per month salary and 10 per cent. interest on the money, with good security. Address No. 562, care Manufacturers' Record.

HOTELS FOR SALE

FOR SALE—Foy Hotel, Indian Spring, Ga.; new and modern resort hotel; 60 rooms and furnishings; on reasonable terms. Address H. J. Biddenback, Springfield, Ga.

WINTER RESORT

RED MINERAL SPRINGS, MT. PLEASANT, TEXAS, a delightful winter resort, boating, bathing and other outdoor amusements affording pleasant recreation. Red Mineral Springs water is especially valuable in cases of indigestion, stomach, kidney and bladder troubles; highly recommended by doctors and chemists; splendid hotel facilities. Red Mineral Springs Development Co., Mt. Pleasant, Texas.

CAMP HOUSES

BUILD your own camp house, not a tent, for health, business or pleasure; 10x12 feet; substantial as a house, with the advantages of a tent; wood-frame floor and ceilings, galvanized roof, heavy waterproof duck walls; complete blueprint and specifications for \$2. Address Central Roofing & Supply Co., Box 177, Evansville, Ind.

INDUSTRIES WANTED

CANNING PLANT

CANNING PLANT—City in heart of truck-growing section will assist in organization and operation first-class cannery; building and some machinery installed already owned locally. Address C. Fort Andrews, Secretary Board of Trade, Waycross, Ga.

TILE AND SEWER PIPE PLANT

LOCATION FOR TILE AND SEWER-PIPE PLANT.—Good town on Seaboard Air Line Railway offers a material suitable for the manufacture of tile and sewer pipe; material, coal site in immediate proximity to each other, with good railroad facilities. Address J. W. White, General Industrial Agent, Seaboard Air Line Railway, Norfolk, Va.

TILE AND BRICK PLANT

POTEAU, OKLAHOMA, has an abundance of shale suitable for tile and brick; has been tested; any reasonable inducement will be offered to foreign capital. Address Business Men's League, Poteau, Okla., O. C. Fontaine, Secy.

BRICK PLANTS

BRICK PLANT WANTED AT COLEMAN, TEXAS.—Steel now being laid out of Coleman on the 310-mile Coleman-Texico cut-off of the Santa Fe, the best road ever built in Texas, through the best and most rapidly developing part of the United States. The Temple branch of the Santa Fe also passes through Coleman. A million brick are needed in Coleman now, also brick to build a number of new towns on the cut-off. We have unlimited amount of best shale, abundant water, cheap fuel and are the distributing point for a large area. Ask the Commercial Club, Coleman, Tex.

FIRE BRICK

FIRE BRICK AND POTTERS' CLAY.—Excellent quality fire-brick clay suitable for paving brick, fire brick, drain pipes and pottery; as good as any fire clay in the State; shipping facilities excellent; cheap fuel; plenty of good water; healthy country; labor plentiful; supply of clay inexhaustible. Refer to File No. 503. J. I. Hey, Auditor and Traffic Manager, Marshall & East Texas Railway, Marshall, Texas.

GLASS FACTORY

ATLANTA, TEXAS, WANTS A GLASS FACTORY.—We have an unlimited quantity of glass sand that analyzes over 99 per cent. silica; natural gas in any quantity at satisfactory price; salt and lime manufactured close by; plenty of timber and water and other material; free site, free sand 20 years, exemption from city taxation 10 years, free artesian water to the first factory; transportation and rates all right. Write for full particulars on this and other factory proposition. Great opportunities. Cass County Industrial League, Atlanta, Tex.

COTTON MILLS

THE BUSINESS MEN'S LEAGUE of Poteau will take \$30,000 stock in a \$100,000 cotton mill; good railroad facilities; cheap fuel; plenty of water. Address Business Men's League, Poteau, Okla., O. C. Fontaine, Secy.

ABILENE, TEXAS, wants a cotton mill; inexhaustable supply of pure water; steam coal at \$1.50 per ton; splendid shipping facilities; near the geographical center of the State; one-quarter million bales of cotton produced within a radius of 45 miles of the city last year. Address Abilene 25,000 Club, Box 537.

HOTELS WANTED

MINERAL WELLS, TEXAS—One of America's greatest resorts for the treatment and care of people afflicted with Bright's disease, rheumatism, stomach, liver, kidney and bladder troubles; with 150,000 visitors annually; has sixty hotels and large boarding-houses now in operation. We need a modern hotel with from 300 to 500 rooms, built and equipped to cater to a high-class patronage, and we can show that such a hotel will pay. We wish to correspond with parties experienced in this line of endeavor desiring this kind of investment. Some local capital could be interested. Address C. W. Wilson, President Commercial Club, Mineral Wells, Texas.

ICE PLANT

ICE PLANT WANTED—Itasca, Texas, the second largest town in Hill county; situated in the heart of the blackland belt of Central Texas; 15,000 population of well-to-do people in our trade territory to serve; abundance of purest artesian water on liberal terms; with free site and liberal subscriptions to stock, and every reasonable encouragement to experienced, practical man to build and operate a ten-ton ice plant. Address Board of Trade, Itasca, Texas.

CREAMERY

WAXAHACHIE, TEXAS, wants a creamery: has 10,000 population, and 80,000 in the county, with 1,276,000 within a radius of 100 miles; Ellis county produces more cotton than any other county in the world; with railroads radiating in five directions and reaching many populous cities; in the famous alfalfa belt of Texas; with an abundance of pure water, fine water-works and sewerage system; now spending \$250,000 on macadamized roads within a radius of 10 miles and leading into the city; with at least 1000 good milk cows to start on within a radius of five miles, and this number would possibly be quadrupled within a short time. Waxahachie has many beautiful homes, 10 church edifices; is the home of Trinity University; public high school affiliated with State University. To a competent, practical man, liberal inducements will be offered by the citizens of Waxahachie for the location of a good creamery here. Interested parties will receive full information by addressing Roy Connally, Secy. Waxahachie Com'l Club, Waxahachie, Tex.

COTTON COMPRESSES

QUANAH, population 5000, marketed 15,000 bales cotton 1909; wants cotton compress; 100,000 bales in sight for same low estimate; citizens will take \$15,000 stock in such enterprise; want experienced party to take balance. Chamber of Commerce, Quanah, Tex.

COTTONSEED-OIL MILL

LOCATION FOR COTTONSEED-OIL MILL. The citizens of a thriving little town in Georgia, on the Seaboard Air Line Railway, are anxious for a cottonseed-oil mill, and will subscribe \$15,000 to \$20,000 for the establishment of such an industry if an experienced oil-mill man will invest a like amount; location in center of cotton district, and abundant seed supply is available. Full information on request. J. W. White, General Industrial Agent, Seaboard Air Line Railway, Norfolk, Va.

MISCELLANEOUS

MOVE SOUTH to the land of cotton. \$25 gross made per acre. Augusta, Ga., is the South Atlantic Cotton Center—the city of Cotton, Climate and heart, Ind. Augusta wants Farmers! Augusta wants Wholesale Merchants! Augusta wants Manufacturers! Write Adv. Com. Chamber Commerce, Augusta, Ga.

NAVASOTA, TEXAS.—With railroads radiating in eight directions and prospective navigation to deep water, and with a sufficient quantity of raw material at hand to secure the successful operation of the following manufacturing enterprises, we feel warranted in inviting the attention of business men to invest with us in the following: Cotton-yarn mill, pressed-brick plant, and creamery for one thousand cows. Address J. J. Felder, Navasota, Tex.

THE CITY OF FLORENCE, S. C., in the center of the great cotton and tobacco region of the Pee Dee section of South Carolina, has attractive propositions to offer for a brick-manufacturing plant, a carriage and wagon factory, a machine shop and foundry, lumber and woodworking plant; finest distributing point in the State, with unsurpassed railroad facilities; abundance of good brick clay. Such plants could control output in this the finest agricultural region in the Southeast. Correspondence solicited by the Florence Board of Trade.

A FREE SITE FOR MANUFACTORY.—Anyone desiring a free site for a manufactory along railroad with a long-time contract for natural gas at 6 cents per thousand feet, glass plant preferred, will address P. O. Box 161, Shinnston, W. Va.

TUPELO, MISSISSIPPI, offers exceptional opportunities for a corn mill, supply store, tile plant, shirt and overall factory (denim and shirting made here), alfalfa mill, etc. Also want wholesale notion and dry-goods house, brick plant. Tradesmen and artisans will find many trades not represented in this progressive city. Local interest in worthy enterprises. Has two lines of railway, Frisco and Mobile & Ohio; new road surveyed and bonds voted for it. Wholesale trade now million annually. Large territory to draw from. Best diversified farming country in Miss. Whites in majority. Farmers now ship alfalfa, poultry, stock. Lands reasonable. Good schools, neighbors and water. If you are looking for a location, investigate Tupelo. Get book of facts. Tupelo is in northeast Mississippi. Unexcelled climate. Address Secretary Business Club, Tupelo, Miss.

HOUSTON NEEDS a flour mill; free site on the great Houston Ship Channel; also free site for a hardwood manufacturing plant; unlimited raw material at hand; water transportation and seventeen rail lines; and the distributing center for the entire Southwest. Write Adolph Boldt, Secretary Houston Business League, Houston, Texas.

"TAMPA IS THE TOWN TO THE TO."—Gateway to Gulf; nearest important American port to Panama canal; doubling population every four years; 100 per cent. city of South; big opportunities for investor, manufacturer, homeseker; tourists' paradise. For literature address W. B. Powell, Secretary Board of Trade, Tampa, Fla.

FURNITURE FACTORY.—Free site and liberal stock subscription for location of furniture factory of any kind. Abundance of raw material and unexcelled transportation facilities. Address Chas. R. Rowe, Secretary Lufkin Progressive League, Lufkin, Tex.

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